United States
Department of the Interior
U.S. Geological Survey
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CATALOG OF EARTHQUAKES ALONG THE SAN ANDREAS FAULT SYSTEM IN CENTRAL CALIFORNIA, JANUARY-MARCH 1977

By S. M. Marks and F. W. Lester

Open-File Report 80-1233

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INTRODUCTION

Numerous small earthquakes occur each day in the Coast Ranges of central California. The detailed study of these earthquakes provides a tool for gaining insight into the tectonic and physical processes responsible for the generation of damaging earthquakes. This catalog contains the fundamental parameters for earthquakes located within and adjacent to the seismograph network operated by the U.S. Geological Survey(USGS), during the first quarter of 1977.

The motivation for these detailed studies has been described by Pakiser and others (1969) and by Eaton and others (1970). Similar catalogs of earthquakes for the years 1969, 1970, and 1971 have been prepared by Lee and others (1972b, c and d). Catalogs for the first, second, third, and fourth quarters of 1972 and the first, second, third and fourth quarters of 1973 have been prepared by Wesson and others (1972a, b, 1973b, and 1974a and b), by Bufe and others (1975), and by Lester and others (1976a and b). Catalogs for the years 1974, 1975 and 1976 have been prepared by Lester and Meagher (1978), by McHugh and Lester (1978 and 1979). The basic data contained in these catalogs provide a foundation for further studies.

This catalog contains data on 1009 earthquakes in central California. Arrival times at 227 seismograph stations were used to locate the earthquakes listed in this catalog. Of these 207 were telemetered stations operated by USGS. Readings from the remaining 20 stations were obtained through the courtesy of the Seismographic Stations, California Institute of T chnology, Pasadena, University of California, Berkeley (UCB), and the California Department of Water Resources, Sacramento.

The Seismographic Station of the University of California, Berkeley, has for many years published a bulletin describing earthquakes in northern California and the surrounding area and listing readings at UCB stations from more distant events. The purpose of the present catalog is not to replace the UCB Bulletin, but rather to supplement it, by decribing the seismicity of a portion of central California in much greater detail.

INSTRUMENTATION

The telemetered seismograph system used may be illustrated by block diagram (Figure 1). The equipment at each station includes a vertical component, 1 Hz seismometer (usually Mark Products, Model L-4C), a package containing a preamplifier and voltage-controlled oscillator (U.S.G.S., Model J302), and batteries. The frequency-modulated tone produced at each station is carried by wire (occasionally by radio) to a terminal where it is combined with the tones of up to 7 other stations. The resulting multiplexed signal is then transmitted by voice-grade telephone circuits or radio to the USGS office in Menlo Park, California. The eight channels of data on each line are separated and demodulated by

discriminators and recorded on 16 mm film using a Develocorder (Teledyne, Geotech, Model FR-400). Each Develocorder records seismic signals of up to 17 stations. In addition, 3 timing signals (WWVB on one trace, and a chronometer on the other two) are recorded simultaneously with the seismic signals.

Figure 2 illustrates the overall response of the seismic systems for typical stations. Magnification for individual stations is adjusted according to the background noise level in steps of 6 decibels. As a result, the response for an individual station may differ from that of the typical station by a factor of 2, 4, 8, or 16. Precise calibrations indicate that most stations are operated at magnifications of 25,000 to 100,000 at 1 Hz.

All stations used in the present study are listed in Table 1. Station locations are plotted on Figure 3, except for 11 stations which are located outside the map boundaries.

DATA PROCESSING AND ANALYSIS

The telemetered seismic data recorded on 16 mm film are processed manually to yield information on first P-arrivals, directions of first motions, maximum amplitudes, and signal durations. These data are then processed by computer to give origin time, hypocenter location, magnitude, and pattern of first motions of the earthquakes using the HYPO71 computer program (Lee and Lahr, 1972). Each roll of film contains about 24 hours recording time and is processed in the following steps: (1) scanning, (2) timing using a digitizer which prepares punched cards, (3) batch processing by computer program HYPO71, (4) correcting errors, (5) adding data from other sources, (6) rerunning HYPO71, (7) analyzing poor solutions, and (8) eliminating explosions.

In the routine data processing, local events with signal duration of 10 seconds or more are always timed. This corresponds to a cutoff at about magnitude 1 for events within the USGS network. Some smaller events for which 6 clear first arrivals can be obtained are also timed. The magnitude cutoff for events outside, but near the USGS network, is somewhat larger than 1. The catalog of earthquakes reported here contains all hypocenter solutions obtained. Because the station coverage is not uniform and because some events outside the network are reported, the cutoff for small magnitudes is not uniform over the entire area reported.

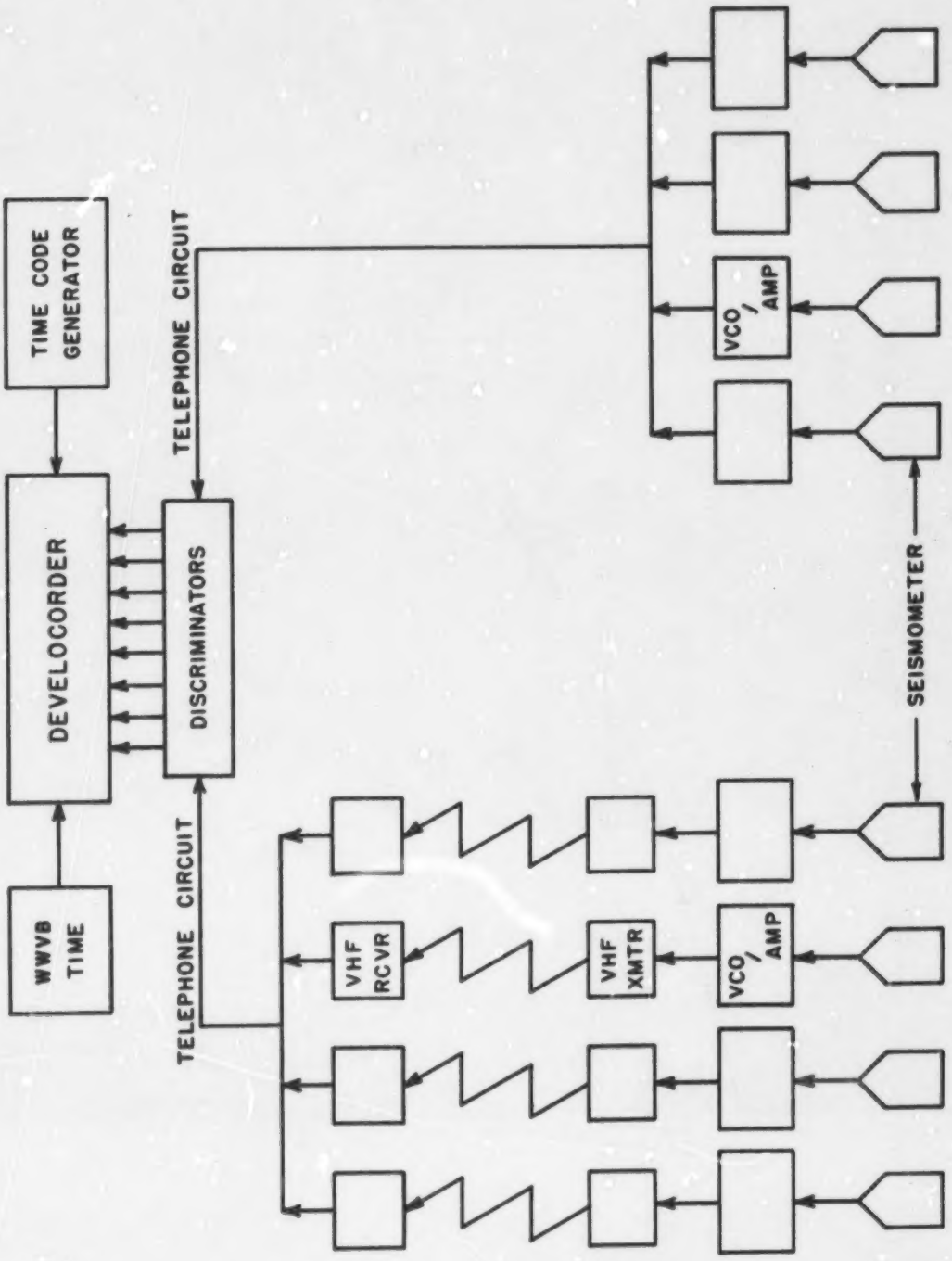

Figure 1. Block diagram of the USGS telemetered seismograph system.

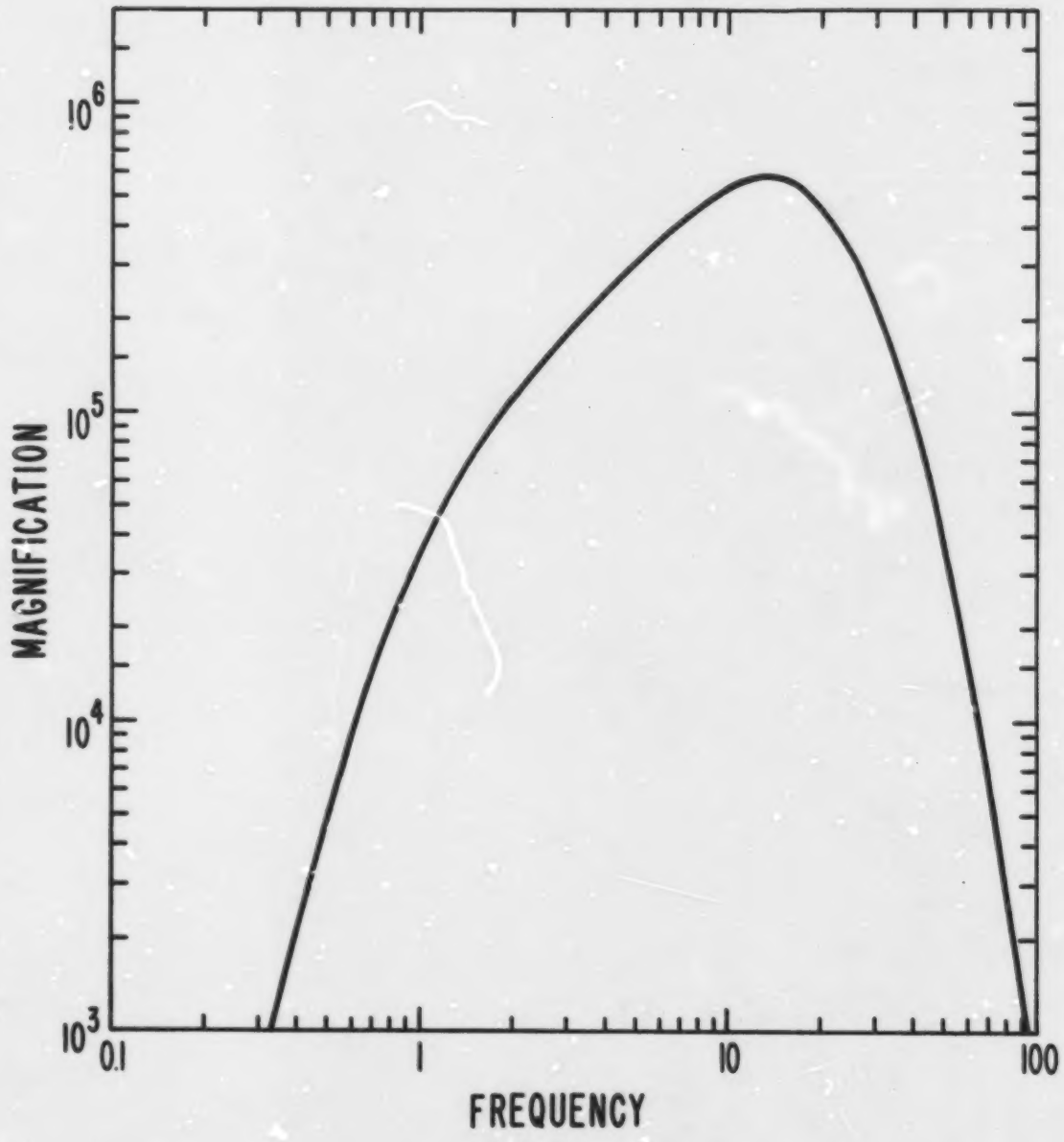

Figure 2. System response of an USGS telemetered seismograph station. This magnification curve is obtained for a system (L-4C seismometer, U.S.G.S. J302, VCO/Amplifier, Develco Discriminator, and Geotech Develocorder) with attenuation set at 12 db.

TABLE 1. STATION DATA *

USGS TELEMETERED STATIONS

CODE	LAT N	LONG W	ELV	K	D(E)	D(W)	NOTE **
AAF	38-53.59	123-32.28	710	1	5.1	(3.5)	
ABAB	38 52.76	121 04.05	422	1	(3.5)	(3.5)	01/01 TO 02/14
ABJS	39 09.92	121 11.47	457	1	(3.5)	(3.5)	
ACH	37-58.57	121-45.62	74	1	7.0	6.2	
ADWD	38 26.35	120 50.89	251	1	(3.5)	(3.5)	
AFHD	38 56.69	120 58.10	524	1	(3.5)	(3.5)	
AFHS	39 02.51	120 47.48	1064	1	(3.5)	(3.5)	
AFID	38 47.54	121 20.91	31	1	(3.5)	(3.5)	
AGRI	38 50.68	120 58.88	305	1	(3.5)	(3.5)	
AHDR	39 02.90	121 04.59	483	1	(3.5)	(3.5)	
AHFR	38 51.26	121 04.23	354	1	(3.5)	(3.5)	
ALIN	38 53.28	121 17.27	54	1	(3.5)	(3.5)	
ALM	37- 9.50	121-50.82	244	1	1.6	1.8	
ALX	38-42.65	122-45.30	379	1	0.8	0.8	
AND	37- 9.77	121-37.45	244	1	3.0	3.2	
ANG	37-51.68	122-25.77	223	1	2.2	2.2	
ANV	37-38.75	121-01.79	604	1	2.0	2.4	
ANZ	36-53.08	121-35.45	122	2	4.4	1.4	
APHR	38 52.62	121 13.03	133	1	(3.5)	(3.5)	
ARN	37-20.96	121-31.96	628	1	3.9	4.2	
ARPW	38-57.38	121-09.73	320	1	(3.5)	(3.5)	
ARRA	38 45.92	121 10.31	127	1	(3.5)	(3.5)	
ARWJ	38 41.19	120 57.38	460	1	(3.5)	(3.5)	
ASHR	38 29.86	121 12.29	52	1	(3.5)	(3.5)	
ATR	36-14.95	120-20.52	485	1	6.7	5.2	
AVRS	39-01.49	121-16.08	91	1	(3.5)	(3.5)	
BAM	37-19.09	122-09.16	820	1	3.6	3.3	
BBR	38-15.65	122-32.99	137	1	2.8	2.2	
BCH	35-11.10	120-05.05	1140	2	(3.5)	(3.5)	
BCR	37- 9.62	122- 1.57	660	2	3.7	4.7	
BEN	36-30.60	121- 4.53	448	2	3.4	3.0	
BFS	37-40.71	120-20.80	309	1	(3.5)	(3.5)	
BGG	38-48.84	122-40.76	1125	1	3.0	(3.5)	
BGH	37-20.52	122-20.34	158	2	3.8	3.8	
BGM	36-35.48	121- 1.52	1216	1	3.0	(3.5)	
BKO	38-49.46	122-50.57	879	1	3.1	(3.5)	
BOL	37-48.97	122- 3.72	610	1	4.6	5.0	
BRP	38-40.07	122-11.60	867	1	3.9	(3.5)	
BTT	36-51.01	121-33.04	98	2	4.5	2.3	
BTW	36-18.90	120-55.75	381	2	2.1	2.1	
BUZ	37-01.07	121-49.15	213	2	4.9	5.2	
BVL	36-34.51	121-11.34	510	2	3.1	0.6	

TABLE 1. STATION DATA (CONTINUED)

USGS TELEMETERED STATIONS

CODE	LAT N	LONG W	ELV	K	D(E)	D(W)
BWR	37-55.45	122- 6.40	221	1	5.1	5.1
CAL	37-27.07	121-47.95	265	1	4.4	4.3
CAN	37- 1.52	121-29.02	332	1	3.6	5.0
CAR	38-19.28	122-47.73	98	1	2.2	2.2
CAS	35-55.90	120-20.22	1189	1	5.2	5.2
CBC	36-55.88	121-39.63	219	2	4.4	3.2
CBL	37-07.67	122-09.98	792	2	1.7	1.7
CBO	37- 6.71	121-41.33	192	1	2.2	2.7
CCC	36-53.31	121-42.34	129	2	4.0	3.7
CCQ	37-47.49	121-56.89	219	1	7.4	(3.5)
CDR	38-22.19	122-27.70	620	1	2.2	2.2
CHR	36-57.46	121-35.01	241	1	2.1	3.6
CMT	38-48.35	122-45.31	1286	1	3.8	(3.5)
CNR	36-42.55	121-20.60	305	2	4.8	0.7
CNS	37-56.33	120-31.76	373	1	(3.5)	(3.5)
COE	37-15.46	121-40.35	366	1	5.9	6.8
CRG	35 14.53	119 43.40	1204	2	(3.5)	(3.5)
CRH	38- 1.12	120-30.57	475	1	(3.5)	(3.5)
CRY	36-05.65	120-26.08	296	1	(3.5)	(3.5)
CSH	37-38.88	122-02.57	170	1	(3.5)	4.0
CVD	38-46.14	123-00.89	150	1	3.7	(3.5)
CYO	37-33.70	122-05.45	67	1	2.5	3.2
CZD	36-54.54	121-48.02	30	2	4.0	3.6
DIL	36-50.12	121-38.64	204	2	3.2	2.2
DOO	37-43.80	121-50.12	198	1	6.8	6.8
DRY	38-46.03	123-14.31	772	1	4.3	(3.5)
DSR	37-57.98	122-15.17	109	1	(3.5)	(3.5)
DUR	38- 1.78	122- 0.05	168	1	8.0	5.4
EKH	36-39.88	121-10.45	342	1	1.6	4.0
ELG	37-30.84	120-27.74	202	2	2.5	2.7
EMM	36-39.68	121- 5.76	488	1	0.8	2.2
EUC	37- 3.04	121-48.56	438	2	3.0	3.8
FAR	37-41.90	123- 0.00	107	2	1.3	1.3
FEL	36-59.00	121-24.09	323	1	3.2	4.3
FRP	36-45.22	121-29.43	705	2	2.2	0.8
FTH	36-53.29	121-28.13	101	1	(3.5)	(3.5)
FTR	38-31.36	123-09.66	528	1	3.9	(3.5)
GDH	35-49.86	120-21.17	433	1	3.3	3.4
GHS	37- 5.75	121-26.83	778	1	2.3	4.4
GLV	38-53.80	122-46.58	893	1	2.8	(3.5)
GRW	37-01.02	121-39.20	133	1	2.1	2.5
GVR	38-16.84	122-12.89	257	1	4.4	5.2

TABLE 1. STATION DATA (CONTINUED)

USGS TELEMETERED STATIONS

CODE	LAT N	LONG W	ELV	K	D(E)	D(W)
GYP	38-45.88	122-50.65	1054	1	3.4	(3.5)
HEC	35-40.93	121-09.15	514	2	4.3	4.3
HER	36-22.38	120-49.13	750	1	4.0	1.0
HLB	38-35.36	122-54.54	165	1	3.8	(3.5)
HLM	37-06.56	121-49.95	908	2	2.8	3.1
HLS	39-02.43	123-01.12	956	1	2.8	(3.5)
HMR	38- 9.28	121-48.02	65	1	6.3	6.3
HOC	38-36.36	123-11.31	518	1	3.6	(3.5)
HOG	39-07.70	122-49.47	903	1	2.8	(3.5)
HST	36-21.35	121-32.41	646	2	1.8	2.2
IND	35-54.39	120-40.94	497	2	4.2	3.4
JHC	36-32.82	121-23.53	207	2	0.9	0.9
JOL	36- 5.02	121-10.15	336	2	1.7	2.2
JON	36-36.65	121-18.81	1052	2	1.5	0.7
JSR	36-48.99	121-17.92	215	1	2.6	3.9
KNR	36-54.10	121-25.56	66	1	4.0	5.6
LCH	37-44.28	122- 3.83	312	1	4.3	4.6
LNS	38- 9.15	122-42.75	120	1	1.9	1.9
LOR	36-14.79	121- 2.55	308	2	0.1	0.1
LRV	36-25.46	121- 1.08	555	2	5.5	2.1
LTR	36-53.07	121-18.49	183	1	3.0	4.5
LTW	37-21.22	122-12.25	270	2	3.8	3.4
LWR	36-39.96	121-16.36	232	2	5.1	2.4
LXR	37-12.11	121-59.17	244	1	2.9	(3.5)
MCL	38-47.56	123-07.80	426	1	3.7	(3.5)
MCP	36-39.40	121-21.91	1022	2	(3.5)	(3.5)
MDT	38-48.34	122-26.76	422	1	3.4	(3.5)
MGA	37-38.22	122-28.43	201	2	2.4	2.4
MHR	37-21.57	121-45.38	518	1	5.3	6.2
MIL	37-46.88	122-10.55	90	1	3.1	(3.5)
MIX	38-24.68	122- 3.44	177	1	5.7	5.7
MKI	38-58.17	122-47.22	906	1	3.9	(3.5)
MNR	37-35.68	121-38.22	500	1	4.6	4.6
MOF	38-42.61	123-08.59	802	1	3.0	(3.5)
MON	36-36.03	121-55.06	192	2	1.1	1.1
MOP	36-12.91	120-47.69	784	2	1.8	1.9
MOR	37-48.68	121-48.15	792	1	6.6	6.6
MRS	36-39.48	120-47.62	769	1	3.9	3.8
MSJ	37-31.25	121-52.23	498	1	4.3	4.3
MTH	36-41.18	121-24.80	811	2	(3.5)	(3.5)
MWS	38-33.03	122-43.37	134	1	3.3	3.3
MWV	38-03.83	121-10.89	1411	1	(3.5)	(3.5)

TABLE 1. STATION DATA (CONTINUED)

USGS TELEMETERED STATIONS

CODE	LAT N	LONG W	ELV	K	D(E)	D(W)	
NHR	38 08.75	120 48.82	219	1	(3.5)	(3.5)	
NUT	36-49.46	121-27.44	128	1	(3.5)	(3.5)	
OBF	37-54.00	120-34.04	176	1	(3.5)	(3.5)	
OCR	36-55.03	121-30.46	98	1	3.0	4.4	
OCOR	39 52.55	121 45.93	530	1	(3.5)	(3.5)	
OHON	39 20.18	121 29.05	76	1	(3.5)	(3.5)	
OLC	38- 2.38	122-47.55	30	2	2.6	2.6	01/01 TO 02/23
OLQ	38-02.50	122-47.64	37	2	2.6	2.6	02/23 TO 03/31
ORAT	39-28.13	121-24.80	585	1	(3.5)	(3.5)	
OSTI	39-22.12	121-35.80	29	1	(3.5)	(3.5)	
OSUT	39-16.23	121-51.10	67	1	(3.5)	(3.5)	
OTAB	39-32.75	121-33.65	223	1	(3.5)	(3.5)	
OWYN	39-27.19	121-29.20	177	1	(3.5)	(3.5)	
PAL	37-37.88	121-57.37	463	1	4.3	4.1	
PCL	37- 3.13	121-17.40	152	1	2.2	3.6	
PES	37-11.94	122-20.90	84	2	3.2	2.5	
PFP	36-13.82	121-46.32	349	1	2.2	2.4	
PIN	36-29.40	121-10.11	329	2	1.2	0.3	
PKF	35-52.91	120-24.81	469	1	4.3	5.3	
PKH	36-51.38	121-24.37	122	1	4.6	6.6	
PKM	34 53.75	119 49.13	1704	2	(3.5)	(3.5)	
PLV	36-58.62	121-49.93	158	2	4.9	4.0	
PMR	36-57.19	121-41.70	94	2	3.7	(3.5)	
PNM	38-50.85	122-56.78	783	1	1.7	1.6	
PNP	36-10.12	121-22.68	1591	2	2.1	1.3	
PNQ	36-33.90	121-38.15	268	2	1.8	1.6	
POR	37-15.87	122-12.78	186	2	4.0	3.7	
PRO	37-47.70	122-28.43	107	1	3.0	3.4	
PTV	36- 6.50	120-43.27	506	2	1.7	1.9	
QSR	36-50.02	121-12.76	536	1	3.1	4.0	
RBM	36-50.70	120-49.40	372	1	5.7	5.4	
RDM	39-01.23	122-35.06	469	1	3.2	(3.5)	
RDR	37-03.27	121-43.61	408	1	(3.5)	(3.5)	
RFR	38 14.72	120 31.24	799	1	(3.5)	(3.5)	
RGR	37-02.22	121-57.87	213	2	(3.5)	(3.5)	
RTM	38-56.32	122-40.18	619	1	1.9	(3.5)	
RUS	37-54.75	121-54.33	331	1	4.8	4.8	
SAC	37-34.95	122-25.03	207	2	2.2	2.2	
SAW	37-12.74	122-10.06	262	2	4.6	4.0	
SBCC	34-56.48	120-10.32	510	2	(3.5)	(3.5)	
SBCD	34-22.12	119-20.63	213	2	(3.5)	(3.5)	
SBLC	34-29.79	119-42.91	1190	2	(3.5)	(3.5)	

TABLE 1. STATION DATA (CONTINUED)

USGS TELEMETERED STATIONS

CODE	LAT N	LONG W	ELV	K	D(E)	D(W)	
SBLP	34-33.62	120-24.03	134	2	(3.5)	(3.5)	
SCR	38-46.15	122-46.87	1017	1	3.0	(3.5)	
SFT	37-24.31	122-10.55	143	1	4.0	4.0	
SGC	37-16.96	122-03.00	198	1	5.5	4.0	
SGM	38-52.03	122-42.58	1080	1	4.1	4.0	
SHC	38-40.22	122-38.03	1200	1	1.3	1.6	01/01 TO 01/20
SHG	36-24.83	121-15.22	192	2	0.4	0.1	
SHQ	38-40.17	122-37.93	1311	1	1.3	1.6	01/20 TO 03/31
SHR	38-31.20	122-36.43	328	1	2.0	2.0	
SJG	36-47.88	121-34.43	171	2	3.0	1.5	
SKG	38-42.12	123-00.81	282	1	3.0	(3.5)	
SLV	36-46.53	121-20.96	155	1	(3.5)	(3.5)	
SL8	37-04.81	121-05.65	122	1	(3.5)	(3.5)	
SMM	36-04.18	120-35.68	988	1	(3.5)	(3.5)	
SNO	38-56.43	123-11.50	870	1	4.0	(3.5)	
SNT	37-12.41	121-47.84	149	1	3.2	3.8	
SOS	37-10.17	121-55.84	946	1	2.8	3.4	
SPT	38-10.96	122-27.20	88	1	3.2	2.2	
SRA	37 46.03	121 56.25	171	1	(3.5)	(3.5)	
SRQ	36-40.15	121-31.19	408	2	1.4	0.5	03/04 TO 03/09
SRQ2	36-39.99	121-31.12	395	2	1.4	0.5	03/09 TO 03/31
SRS	36-40.11	121-31.13	399	2	1.4	0.5	01/01 TO 03/04
STF	36-48.72	121-29.97	340	2	4.5	3.4	
STJ	37-20.03	122- 5.48	122	1	5.7	4.1	
STN	37-54.27	120-24.29	366	1	(3.5)	(3.5)	
STQ	36-37.98	121-14.05	357	1	5.5	1.9	
STV	37-17.07	122- 7.42	357	2	3.0	3.0	
SVC	37-17.11	121-46.35	128	1	5.4	4.8	
SWB	36-44.27	121-17.21	398	1	3.8	4.9	
TAY	35-56.73	120-28.45	552	1	4.3	5.6	
TGR	37-01.71	121-52.58	253	2	4.7	4.1	
TMN	38-23.15	122-40.83	105	1	2.7	2.7	
UCS	37-00.07	122-02.90	177	2	(3.5)	(3.5)	
VYD	36-44.96	121-24.80	585	2	4.4	(3.5)	
WDS	37-25.08	122-16.33	280	2	3.3	2.5	
WHW	38-27.42	122-53.26	50	1	1.6	1.6	

TABLE 1. STATION DATA (CONTINUED)

USGS TELEMETERED STATIONS

CODE	LAT N	LONG W	ELV	K	D(E)	D(W)
WKR	35-48.87	120-30.67	503	2	4.2	4.4
YEG	35-26.18	119-57.56	939	2	(3.5)	(3.5)

** THIS COLUMN INDICATES THE OPERATION PERIOD. IF IT IS BLANK THEN THIS STATION HAS BEEN OPERATED CONTINUOUSLY DURING THE FIRST QUARTER OF 1977.

CAL TECH STATIONS

CODE	LAT N	LONG W	ELV	K	D(E)	D(W)
ISA	35-39.80	118-28.40	835	2	(3.5)	(3.5)
SYP	34-31.63	119-58.67	1305	2	(3.5)	(3.5)

UNIVERSITY OF CALIFORNIA STATIONS

CODE	LAT N	LONG W	ELV	K	D(E)	D(W)
BKS	37-52.60	122-14.10	276	1	2.4	2.4
BRK	37-52.40	122-15.60	81	1	2.4	2.4
FHC	40-48.10	123-59.10	610	1	(3.5)	(3.5)
FRI	36-59.50	119-42.30	119	1	(3.5)	(3.5)
JAS	37-56.80	120-26.30	457	1	(3.5)	(3.5)
LLA	36-37.00	120 56.60	475	1	1.5	2.1
MHC	37-20.50	121-38.50	1282	1	4.5	5.0
MIN	40-20.70	121-36.30	1495	1	(3.5)	(3.5)
PCC	37-30.00	122-22.90	91	2	3.7	3.7
PRI	36- 8.50	120-39.90	1187	1	4.0	4.0
PRS	36-19.90	121-22.20	363	2	1.1	1.1
SAO	36-45.90	121-26.70	350	2	2.7	1.0
WDC	40-34.80	122-32.40	300		(3.5)	(3.5)

TABLE 1. STATION DATA (CONTINUED)

CALIFORNIA DEPARTMENT OF WATER RESOURCES STATIONS

CODE	LAT N	LONG W	ELV	K	D(E)	D(W)
KPK	39-35.01	121-18.32	897	1	(3.5)	(3.5)
MGL	39-48.71	121-33.42	1010	1	(3.5)	(3.5)
ORV	39-33.33	121-30.00	362	1	(3.5)	(3.5)
PAM	39-26.94	121-31.19	131	1	(3.5)	(3.5)
SLD	37-04.48	121-13.33	443	1	2.3	5.2

* LAT AND LONG ARE LATITUDE AND LONGITUDE IN DEGREES AND MINUTES. ELV IS ELEVATION IN METERS. D(E) AND D(W) ARE GIVEN IN KILOMETERS. SEE TEXT (P. 15) FOR EXPLANATION OF K, D(E), AND D(W).

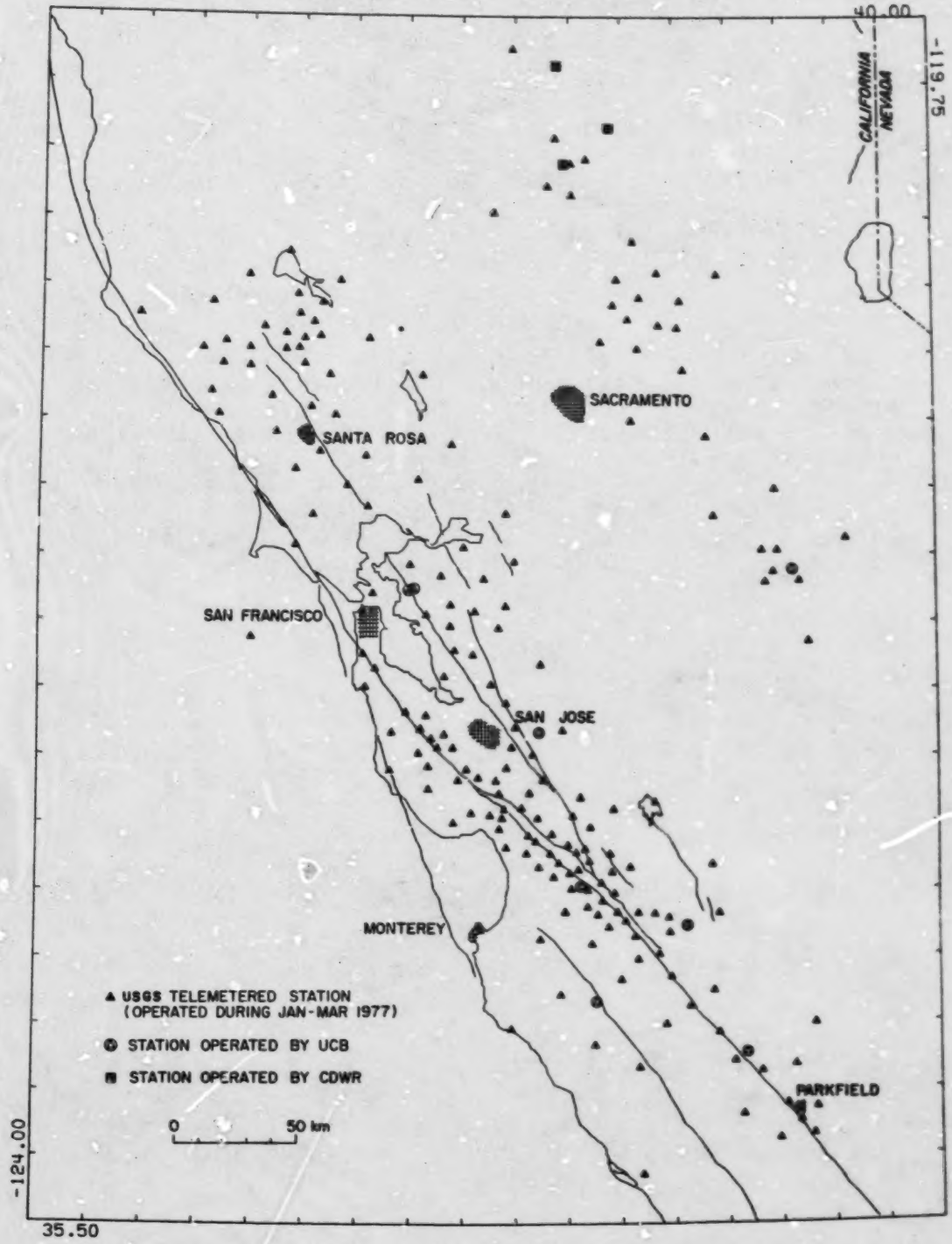

Figure 3. Map showing principal seismograph stations used in locating earthquakes.

Location of earthquakes was based mainly on first P-arrivals. When an adequate location could not be obtained using P-arrivals alone, S-arrivals were used to supplement the P-arrivals whenever possible. The HYPO71 computer program uses Geiger's method (Geiger, 1912) to determine hypocenters by minimizing the residuals between observed and calculated arrivals in a least-squares sense. Traveltimes from a trial hypocenter to the stations and their partial derivatives are computed on the assumptions of a horizontal multilayer velocity model by a technique introduced by Eaton (1969).

The crustal velocity model used was derived mostly from analysis of explosion data by Wesson and others (1973a). It is specified by:

Layer	Depth (km)	P-velocity (km/sec)	S-velocity (km/sec)
1	0 to D	4.0	2.2
2	D to 15	5.9	3.3
3	15 to 25	6.8	3.8
4	below 25	8.05	4.5

The variable boundary between the first and second layer (depth D) is determined for each station from time-term analysis of explosion data whenever they are available. The variable first layer in the crustal model is an approximation of the sedimentary layer above the Pg refractor. To allow for sharp changes in sediment thickness across the San Andreas fault, two D values for each station were determined: one for sources east of the fault, and the other for sources west of the fault. The set of D values to be used in the program is determined by the location relative to the fault of the station with the earliest P-arrival time. For example, if the earliest P-arrival occurs at a station west of the fault, then the set of D values appropriate to the sources on the west side, D(W), of the fault is selected. Table 1 shows values of D in kilometers at each station for sources east (D(E)) and west (D(W)) of the San Andreas fault as well as the location of the stations relative to the fault (K = 1 for east, and K = 2 for west). An assumed value for D of 3.5 km (about the median of the calculated values) is given in parentheses if a value could not be determined from explosion data.

The method used for estimating the Richter magnitude of the earthquakes has been described by Lee and others (1972a). In brief, the magnitude of an earthquake is based on the average of magnitudes estimated at various stations. Station magnitude (M) is derived from its recorded signal duration (τ) according to:

$$M = -0.87 + 2.00 \log(\tau) + 0.0035\Delta$$

where Δ is the epicentral distance in kilometers. The signal duration is defined as the duration time in seconds from the onset of the first P-arrival to the point where the trace amplitude (peak-to-peak) falls below 1 cm as it appears on the Geotech film viewer.

For earthquakes with Richter magnitudes of 3.5 and below, equation (1) gives a good estimate of the magnitude. Richter magnitudes have been calculated (Richter, 1942) for earthquakes with signal duration magnitudes of 3.5 or greater using records obtained from the UCB Wood-Anderson seismographs at Berkeley and Mount Hamilton, and the Stanford-USGS Wood-Anderson at Palo Alto. The earthquakes for which the Richter magnitude has been determined from Wood-Anderson records are indicated in the catalog by an R next to the magnitude.

A substantial effort has been made to identify explosions so as to eliminate them from the catalog. Explosions can be identified on the basis of several criteria: location of a known quarry or blasting site, shallow focal depth, time of day, focal mechanism, and/or through correspondence with quarry operators. During the first quarter of 1977, 43 blasts were identified and eliminiated from the catalog.

DISCUSSION OF CATALOG

The parameters for the earthquakes listed in the Appendix include the origin time, location of hypocenter (epicenter and focal depth), and magnitude. In addition, six other parameters are listed so that an evaluation of the quality of the hypocenter solution may be made. These parameters are (1) the largest azimuthal separation between stations (GAP), (2) the epicentral distance to the nearest station (DMIN), (3) the root-mean-square error of the time residuals (RMS), (4) the standard error of the epicenter (ERH), (5) the standard error of the focal depth (ERZ) and (6) the number of P- and S-arrivals used in the location (NO). Based on these parameters, the general reliability of each earthquake solution is graded as either excellent (A), good (B), fair (C), or poor (D). Exact rules of quality classification are given in the Appendix.

A brief discussion on the accuracy of hypocenter determinations has been given by Lee and others (1971). To obtain a reliable epicenter, GAP should be less than 180 ; to obtain a reliable focal depth, DMIN should be less than the focal depth. In addition, systematic errors arise from uncertainties in the crustal velocity model. These errors cannot be determined except through controlled experiments, e.g., known explosions in the focal region. Because we present all hypocenter solutions of earthquakes in the region we studied, their quality varies. Although standard errors of epicenter and focal depth (ERH and ERZ) are given, they must be interpreted with caution, especially for quality C and D solutions. Hypocenter solutions for known blasts distributed throughout the San Francisco Bay region indicate that the true positions are often within the standard error limits of the solutions, provided that the

conditions GAP 180 and DMIN is within a few kilometers are met. For example, comparison of locations determined for well-recorded quarry blasts (solution quality A) with the known coordinates indicate a typical error of about 1 km. As suggested by known blasts, a general statement on the accuracy of our hypocenter solutions is as follows:

Solution Quality	Approximate accuracy in Epicenter	Focal Depth
A (excellent)	1 km	2 km
B (good)	2.5 km	5 km
C (fair)	5 km	5 km
D (poor)	5 km	5 km

Epicenters listed in the Appendix are plotted according to magnitude in Figure 4.

The dashed lines in Figure 4 indicate the boundaries of the USGS seismograph network as it existed during the first quarter of 1977. We feel that the hypocenters listed in the the Appendix represent a nearly complete set of earthquakes above magnitude 1 within these boundaries and that these earthquakes are generally well located. Earthquakes outside the dashed boundaries in Figure 4 tend to be less well located, depending on their distance from the network and their relationship to its geometry. Further, the minimum magnitude event that we can detect and locate increases with increasing distance from the network. For earthquakes outside the network, which yielded unsatisfactory locations on the basis of first P-arrivals alone, S-arrivals were included whenever possible.

We believe that the precision of the earthquake locations (or the relative locations) is better than the absolute accuracy of the earthquake locations. Despite our attempts to model the laterally inhomogeneous nature of the velocity structure within the earth's crust using a variable-thickness surface layer, we suspect that the locations within certain parts of the area included in the boundaries of the network may be systematically biased by as much as 2-3 km (Mayer-Rosa, 1973).

Some of the earthquakes listed in this catalog are mutiple events, that is, earthquakes from a given source region which occur in such rapid succession that the seismographs are still recording arrivals from one earthquake when the first arrivals from a following earthquake begin to appear. Depending on the size of the individual events and their separation in time, it may be possible to accurately time and locate the later event(s). Sometimes, however, this is not possible.

The contents of the Appendix, along with similar location information for central California earthquakes since 1969, may be obtained (at modest cost) in forms amenable to computer input (magnetic tape) by contacting:

Environmental Data Service
NOAA
3100 Marine
Boulder, CO 80302

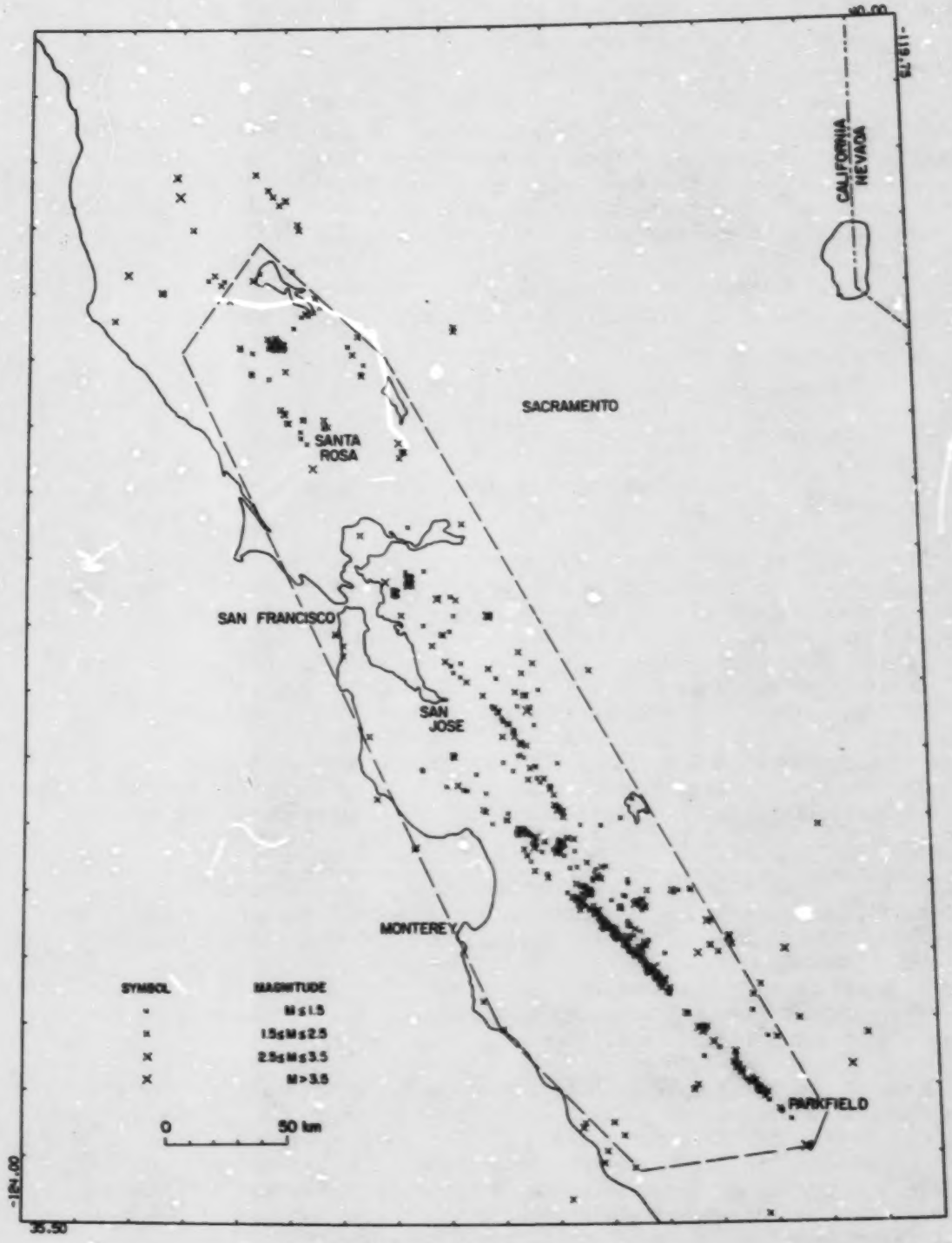

Figure 4. Map showing earthquake epicenters reported in the Appendix. Earthquakes in the region enclosed by the dashed line are generally well recorded and located.

ACKNOWLEDGMENTS

Some of the arrival times used in this study were obtained through the courtesy of the Seismograph Stations, University of California, Berkeley, and the California Department of Water Resources, Sacramento. We thank Dr. B. A. Bolt, Director of the first institution, and Mr. Paul Morrison of the last institution, for their cooperation. Roy Miller of UCB and his staff offered generous help with their data and records. We are indebted to many quarry operators for helping us to eliminate blasts from the earthquake catalog.

We are grateful to Wesley Hall, John Van Schaack, and their associates for operating the USGS seismograph stations and telemetry network. We thank Lu Ann Harvey, Allan Young, Gail Nishioka, and Dave Evans for their help in various phases of data processing and Bill Ellsworth for his comments on the manuscript.

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APPENDIX: CATALOG OF EARTHQUAKES (First Quarter 1977)

Earthquakes along the San Andreas fault system in central California for January-March 1977 are listed chronologically in this APPENDIX.

The following data are given for each event:

1. Origin time in Coordinated Universal Time (UTC): date, hour (HR), minute (MN), and second (SEC). To convert to Pacific Standard Time (PST), subtract eight hours, to Pacific Daylight Time (PDT), subtract seven hours.

2. Epicenter in degrees and minutes of north latitutde (LAT N) and west longitude (LONG W).

3. DEPTH, depth of focus in kilometers. If "#" follows the DEPTH, it means that the focal depth is constrained by the location program.

4. MAG, local magnitude of the earthquake. If "R" follows the magnitude, it indicates the Richter magnitude calculated from Wood-Anderson seismograph records.

5. NO, number of P- and S-arrivals used in locating earthquake.

6. GAP, largest azimuthal separation in degrees between stations.

7. DMIN, epicentral distance in kilometers to the nearest station.

8. RMS, root-mean-square error of the time residuals:

where R_i is the observed seismic-wave arrival time minus the computed time at the i^{th} station.

9. ERH, standard error of the epicenter in kilometers:

where SDX and SDY are the standard errors in latitude and longitude, respectively, of the epicenter.

10. ERZ, standard error of the depth in kilometers.

11. Q, solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution.

Q	Epicenter	Focal Depth
A	excellent	good
B	good	fair
C	fair	poor
D	poor	poor

Q is based on both the nature of the station distribution with respect to the earthquake and the statistical measure of the solution. These two factors are each rated independently according to the following schemes.

Station Distribution

	NO	GAP	DMIN
A	6	90	DEPTH or 5 km
B	6	135	2 x DEPTH or 10 km
C	6	180	50 km
D	Others		

Statistical Measures

	RMS (sec)	ERH (km)	ERZ (km)
A	0.15	1.0	2.0
B	0.30	2.5	5.0
C	0.50	5.0	
D	Others		

Q is taken as the average of the ratings from the two schemes, i.e., an A an a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used, i.e., an A and a B yield a B.

12. QUADRANGLE, for earthquakes between 35° 00.0' and 40° 00.0' N latitude and 119° 45.0' and 123° 45.0' W longitude, QUADRANGLE indicates the name of the U.S. Geological Survey 7.5' quadrangle (or quadrant of 15' quadrangle), in which the epicenter is located. For earthquakes offshore or outside the designated area, the entry is starred and indicates the general geographic area in which the epicenter is located, for example, "***MONTEREY BAY***".

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977

1977		HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
JAN	1	1	44	51.3	37-29.6	121-40.7	6.1	1.4	20	124	11.7	0.16	0.7	0.9	B	MT DAY
	1	2	15	31.8	38-48.5	122-48.1	0.6	1.7	21	58	4.0	0.10	0.3	0.3	A	THE GEYSERS
	1	4	59	48.1	36-54.5	121-29.5	4.2	1.0	22	60	1.7	0.10	0.3	0.3	A	SAN FELIPE
	1	6	9	7.2	39- 4.3	123- 6.0	2.8	1.6	14	226	7.8	0.15	1.7	0.7	C	PURDYS GARDENS
	1	7	21	39.6	38-53.9	123-35.1	15.4	1.7	13	304	4.1	0.21	9.4	6.5	D	NE 1/4 POINT ARENA
	1	7	26	7.9	38-48.9	122-48.4	2.5	1.3	14	76	3.4	0.11	0.4	0.3	A	THE GEYSERS
	1	16	47	25.0	36-28.4	121- 5.6	8.4	1.3	22	62	4.4	0.21	0.8	1.5	B	TOPO VALLEY
	1	18	2	23.0	36-35.1	121-14.3	8.6	1.4	24	69	4.6	0.17	0.6	1.1	B	BICKMORE CANYON
	1	19	2	34.8	36-32.3	120-47.1	5.0	2.4	29	131	13.8	0.21	0.8	0.6	C	PANOCHE
	1	19	14	3.5	36-32.3	120-47.2	5.3	1.8	23	131	13.9	0.23	0.9	0.7	C	PANOCHE
	1	20	9	37.0	38-48.1	122-46.4	2.0	0.8	11	75	1.7	0.10	0.4	0.3	A	THE GEYSERS
	1	21	10	4.2	36-58.8	121-39.5	3.6	1.2	21	45	4.1	0.13	0.4	0.3	A	WATSONVILLE EAST
	2	2	9	37.4	37- 3.2	121-29.0	10.0	2.7	77	50	3.2	0.16	0.3	0.4	B	GILROY HOT SPRINGS
	2	2	15	11.5	37- 3.3	121-28.7	7.3	1.3	40	74	2.7	0.15	0.5	0.9	B	GILROY HOT SPRINGS
	2	2	51	43.4	37- 3.2	121-29.0	8.0	1.2	36	80	3.1	0.14	0.5	1.0	A	GILROY HOT SPRINGS
	2	3	24	39.9	36-23.4	120-33.5	11.2	2.0	26	197	23.5	0.14	0.8	0.5	C	CIERVO MTN
	2	3	51	16.9	36-33.9	121- 9.6	13.1	1.3	24	64	2.8	0.13	0.5	0.9	A	BICKMORE CANYON
	2	5	4	1.7	38-48.5	122-48.4	3.8	1.6	21	58	3.5	0.11	0.3	0.4	A	THE GEYSERS
	2	6	41	54.6	38-48.2	122-48.4	1.4	0.9	10	74	3.9	0.10	0.4	0.3	A	THE GEYSERS
	2	7	13	23.0	35- 9.2	120-32.5	9.0	2.0	14	154	7.7	0.08	0.5	0.6	B	STOCKDALE MTN
	2	11	3	4.7	36-44.2	121-22.9	3.1	1.0	13	57	3.2	0.16	0.5	0.4	B	MT HARLAN
	2	14	31	16.4	36-30.3	121- 8.5	11.2	1.1	18	87	3.3	0.24	1.1	1.9	B	BICKMORE CANYON
	2	16	42	24.5	36-52.7	121-27.5	11.4	1.1	32	40	1.5	0.12	0.3	0.7	A	SAN FELIPE
	2	19	52	23.6	36-57.4	121-40.6	11.8	1.4	20	123	7.0	0.16	0.6	1.5	B	WATSONVILLE EAST
	2	23	35	3.6	38-48.5	122-49.3	0.9	1.4	14	57	2.6	0.06	0.2	0.2	A	THE GEYSERS
	3	0	55	7.9	39- 2.8	123- 3.2	6.7	1.3	7	200	3.0	0.14	1.7	1.7	C	PURDYS GARDENS
	3	3	23	20.9	36-48.3	121-18.6	9.4	2.8	46	53	1.6	0.16	0.4	0.6	B	TRES PINOS
	3	7	1	11.7	38-48.5	122-48.8	1.1	0.7	9	82	3.1	0.11	0.4	0.5	A	THE GEYSERS
	3	17	37	12.6	37-17.6	121-37.7	5.1	2.1	42	90	5.6	0.13	0.4	0.3	B	LICK OBSERVATORY
	3	20	46	57.2	37-17.5	121-37.6	4.8	1.4	24	91	5.5	0.08	0.3	0.2	B	LICK OBSERVATORY
	3	20	54	38.1	36-24.6	121- 1.3	10.2	1.5	17	66	1.7	0.11	0.5	0.9	A	TOPO VALLEY
	3	23	23	44.4	36-49.9	121-26.0	6.9	1.5	18	58	2.3	0.08	0.3	0.6	A	HOLLISTER
	4	2	21	17.8	37- 5.8	122-20.0	11.7	1.6	16	247	11.4	0.06	0.7	0.3	C	ANO NUEVO
	4	5	5	31.0	36-37.7	121-16.8	5.7	2.0	31	52	3.5	0.16	0.4	0.6	B	PAICINES
	4	13	50	47.1	35-52.8	121-23.0	8.6	2.0	14	223	32.1	0.14	1.6	1.1	C	CAPE SAN MARTIN
	4	13	51	49.2	35-51.9	121-23.5	9.0	3.1	21	226	33.7	0.16	1.2	0.8	C	VILLA CREEK
	4	16	4	59.4	36-43.5	121-11.2	1.9	1.3	17	112	6.9	0.18	0.7	0.6	B	CHERRY PEAK
	4	17	29	38.7	38-48.9	122-48.2	3.9	1.0	13	79	3.6	0.16	0.7	0.9	B	THE GEYSERS
	4	19	40	27.3	38-48.6	122-48.5	3.4	1.0	11	71	3.4	0.14	0.7	0.7	A	THE GEYSERS
	5	1	24	48.6	35-42.8	121- 9.4	11.3	2.0	12	254	48.0	0.08	1.4	0.7	C	SAN SIMEON
	5	2	19	24.0	37-47.2	122-12.7	8.8	2.0	46	31	3.2	0.13	0.3	0.5	A	OAKLAND EAST
	5	4	27	32.3	35-50.0	121-12.2	9.4	1.8	15	241	40.4	0.14	1.6	1.1	C	BURNETT PEAK
	5	6	14	2.9	38-48.5	122-47.8	2.3	1.7	25	55	3.7	0.10	0.2	0.2	A	THE GEYSERS
	5	8	28	26.7	36- 2.0	120-37.1	2.4	2.0	15	80	4.5	0.14	0.6	0.5	A	SMITH MTN
	5	12	15	19.3	37-40.3	122- 4.0	5.2	1.6	36	30	3.3	0.14	0.3	0.4	A	HAYWARD

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
JAN 5	12	19	13.0	36-54.7	121-29.2	4.7	1.1	35	53	2.0	0.11	0.3	0.3	A	SAN FELIPE
5	13	58	42.7	36- 0.4	120-35.1	2.6	1.6	11	84	7.0	0.06	0.3	0.3	B	SMITH MTN
5	18	42	23.9	38-48.1	122-48.2	0.6	0.7	9	71	4.1	0.04	0.2	0.3	A	THE GEYSERS
6	0	47	52.7	38-48.1	122-47.0	1.2	0.7	9	85	2.5	0.07	0.3	0.3	A	THE GEYSERS
6	5	40	1.0	38-49.3	122-48.2	1.9	1.6	18	52	3.5	0.13	0.4	0.3	A	THE GEYSERS
6	8	17	55.8	38-47.9	122-27.4	5.6	1.3	9	81	1.3	0.11	1.0	1.1	A	JERICHO VALLEY
6	8	55	14.5	36-37.8	120-48.0	7.0	2.9	63	125	3.7	0.18	0.5	0.7	B	MERCY HOT SPRINGS
6	9	28	1.1	36-37.2	121-17.1	11.1	3.0	66	40	2.7	0.17	0.3	0.4	B	MT JOHNSON
6	14	36	40.6	38-48.0	122-48.7	0.3	1.6	19	54	3.9	0.11	0.3	0.3	A	THE GEYSERS
6	15	12	16.7	36- 0.3	120-34.6	5.7	2.2	19	73	7.4	0.13	0.5	1.3	B	SMITH MTN
6	21	13	4.7	38-48.8	122-47.8	2.1	1.2	12	52	3.7	0.07	0.3	0.2	A	THE GEYSERS
6	22	19	24.5	38-48.4	122-47.7	3.6	1.1	9	74	3.5	0.05	0.2	0.2	A	THE GEYSERS
6	22	28	9.0	36-57.0	121-35.7	4.1	1.6	30	36	1.3	0.10	0.3	0.2	A	CHITTENDEN
6	22	57	10.9	38-48.7	122-48.7	2.3	1.0	8	82	3.0	0.04	0.2	0.2	A	THE GEYSERS
6	23	31	40.8	36-34.9	121-12.8	3.8	1.3	16	65	2.3	0.13	0.5	0.6	A	BICKMORE CANYON
6	23	53	29.5	36-30.2	121- 7.8	10.2	1.3	17	80	4.2	0.19	0.8	1.5	B	BICKMORE CANYON
7	0	53	34.9	36-40.4	121-18.4	5.1	2.6	51	41	3.1	0.17	0.3	0.4	B	PAICINES
7	1	7	59.3	36-40.4	121-18.5	6.2	1.7	30	69	3.2	0.14	0.4	0.6	A	PAICINES
7	1	9	15.2	36-40.4	121-18.4	4.5	1.7	32	69	3.1	0.16	0.4	0.8	B	PAICINES
7	1	30	13.5	36-40.3	121-18.4	4.7	1.6	23	66	3.1	0.13	0.4	1.0	A	PAICINES
7	3	57	47.7	36-59.9	121-47.6	13.0	1.3	19	51	3.1	0.15	0.8	1.3	B	WATSONVILLE WEST
7	6	18	37.3	38-24.3	122-11.8	2.3	1.4	13	86	12.2	0.08	0.5	0.5	B	CAPELL VALLEY
7	6	19	5.0	38-24.1	122-11.4	7.1	1.9	29	86	11.6	0.20	0.6	1.3	B	CAPELL VALLEY
7	6	25	44.4	38-24.0	122-11.9	7.4	1.8	23	84	12.4	0.18	0.7	1.4	B	CAPELL VALLEY
7	15	19	46.2	38-48.4	122-48.8	1.4	1.0	9	82	3.1	0.06	0.3	0.2	A	THE GEYSERS
7	15	59	26.1	38-48.6	122-48.1	0.5	0.9	10	72	4.0	0.07	0.2	0.4	A	THE GEYSERS
7	16	3	36.0	38-49.3	122-47.7	2.0	1.3	17	50	3.7	0.08	0.3	0.2	A	THE GEYSERS
7	18	41	18.4	36-33.5	121- 4.3	8.0	1.1	14	67	5.3	0.18	0.9	1.8	B	SAN BENITO
7	19	9	53.3	36-54.1	121-29.0	8.8	1.3	37	44	2.9	0.12	0.3	0.6	A	SAN FELIPE
7	21	39	17.0	36-13.0	120-49.9	11.5	2.2	30	105	13.9	0.20	0.7	0.6	B	MONARCH PEAK
7	21	48	6.8	38-49.8	122-50.5	2.1	1.7	24	36	0.6	0.12	0.3	0.3	A	THE GEYSERS
8	3	23	3.4	37-54.8	122-10.3	10.4	1.5	28	51	5.8	0.13	0.4	0.6	A	BRIONES VALLEY
8	6	55	50.3	37-55.0	122-10.2	10.1	2.5	52	40	5.6	0.18	0.3	0.4	B	BRIONES VALLEY
8	7	17	33.5	37-54.9	122-10.4	9.5	2.6	52	40	5.9	0.17	0.3	0.4	B	BRIONES VALLEY
8	7	26	55.6	37-55.0	122-10.3	10.5	1.0	18	55	5.8	0.13	0.5	0.9	A	BRIONES VALLEY
8	8	58	13.4	37-55.2	122-10.4	10.5	4.0R	52	40	5.8	0.17	0.3	0.4	B	BRIONES VALLEY
8	9	11	12.3	37-55.1	122-10.3	10.5	1.4	25	56	5.8	0.11	0.3	0.6	A	BRIONES VALLEY
8	9	14	17.1	37-54.6	122-10.1	10.2	1.8	44	38	5.7	0.15	0.3	0.4	B	BRIONES VALLEY
8	9	38	6.9	37-55.3	122-10.5	11.3	4.3R	32	57	6.0	0.15	0.4	0.5	A	BRIONES VALLEY
8	9	39	34.8	37-55.1	122-10.2	8.8	2.7R	17	70	5.7	0.08	0.3	0.5	A	BRIONES VALLEY
8	9	39	40.9	37-54.1	122-10.7	6.1	3.7R	27	65	5.7	0.19	0.6	0.7	B	BRIONES VALLEY
8	9	41	2.3	37-55.6	122-10.4	9.0	2.7	48	42	5.8	0.17	0.3	0.5	B	BRIONES VALLEY
8	9	43	50.2	37-55.5	122-10.4	8.8	1.6	51	41	5.8	0.18	0.3	0.6	B	BRIONES VALLEY
8	9	43	58.2	37-55.6	122-10.3	9.8	2.8	49	42	5.7	0.17	0.3	0.4	B	BRIONES VALLEY
8	9	45	13.4	37-55.7	122-10.3	7.4	2.2	46	42	5.7	0.17	0.3	0.4	B	BRIONES VALLEY

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
JAN 8	9	45	36.0	37-55.4	122-10.2	9.0	2.2	17	70	5.6	0.11	0.4	0.7	A	BRIONES VALLEY
8	9	46	39.6	37-55.2	122-10.2	9.3	1.6	23	50	5.6	0.10	0.3	0.6	A	BRIONES VALLEY
8	9	48	2.4	37-55.6	122-10.1	7.0	1.6	43	42	5.4	0.16	0.3	0.4	B	BRIONES VALLEY
8	9	48	22.6	37-55.1	122-10.3	10.3	1.2	25	40	5.7	0.13	0.4	0.7	A	BRIONES VALLEY
8	9	49	5.4	37-55.6	122-10.2	8.9	1.1	26	50	5.6	0.14	0.4	0.8	A	BRIONES VALLEY
8	9	50	3.2	37-55.0	122-10.2	10.6	1.0	21	69	5.6	0.10	0.4	0.5	A	BRIONES VALLEY
8	9	51	55.0	37-55.5	122-10.4	8.3	2.9	53	41	5.9	0.18	0.3	0.6	B	BRIONES VALLEY
8	9	53	44.2	37-55.4	122-10.3	10.2	1.5	33	41	5.7	0.15	0.4	0.6	A	BRIONES VALLEY
8	9	54	56.2	37-55.2	122-10.3	10.3	2.2	38	41	5.7	0.15	0.3	0.5	A	BRIONES VALLEY
8	10	1	6.1	37-55.1	122-10.3	10.4	1.2	25	51	5.8	0.12	0.4	0.6	A	BRIONES VALLEY
8	10	3	10.7	37-54.8	122-10.5	10.3	1.4	27	52	6.1	0.12	0.3	0.5	A	BRIONES VALLEY
8	10	7	19.7	37-55.6	122-10.3	9.5	1.6	32	42	5.7	0.14	0.3	0.7	A	BRIONES VALLEY
8	10	14	20.3	37-55.4	122-10.3	8.9	0.9	22	78	5.7	0.12	0.4	0.8	A	BRIONES VALLEY
8	10	15	27.0	37-55.7	122-10.2	8.6	1.0	19	83	5.6	0.09	0.4	0.6	A	BRIONES VALLEY
8	10	23	24.1	37-55.8	122-10.4	10.0	1.6	33	42	5.9	0.14	0.3	0.6	A	BRIONES VALLEY
8	10	25	46.9	37-55.6	122-10.3	8.5	1.3	27	71	5.8	0.12	0.3	0.7	A	BRIONES VALLEY
8	10	26	41.8	37-54.9	122-10.4	10.3	1.1	18	82	5.9	0.11	0.4	0.5	A	BRIONES VALLEY
8	10	46	50.1	38-48.6	122-49.2	1.1	1.0	11	58	2.5	0.08	0.3	0.2	A	THE GEYSERS
8	11	1	20.2	37-54.5	122-10.5	10.6	1.0	18	73	6.3	0.10	0.4	0.5	A	BRIONES VALLEY
8	11	4	22.3	37-54.6	122-10.1	10.7	1.8	35	38	5.7	0.15	0.4	0.6	A	BRIONES VALLEY
8	11	15	11.4	37-54.9	122-10.4	9.7	1.4	26	51	5.9	0.14	0.4	0.7	A	BRIONES VALLEY
8	11	55	2.8	37-54.9	122-10.5	10.5	1.2	24	51	6.0	0.15	0.5	0.7	A	BRIONES VALLEY
8	12	6	6.1	37-55.7	122-10.4	10.5	1.4	27	71	5.9	0.10	0.3	0.4	A	BRIONES VALLEY
8	14	15	16.9	37- 0.9	121-11.5	3.7	1.2	23	115	9.7	0.17	0.6	0.6	B	PACHECO PASS
8	14	40	16.9	37-55.2	122-10.6	12.0	0.9	17	74	6.2	0.07	0.3	0.3	A	BRIONES VALLEY
8	15	5	51.4	38-48.6	122-49.3	1.1	0.8	9	90	2.5	0.04	0.2	0.2	A	THE GEYSERS
8	15	20	30.0	37-54.6	122-10.4	9.9	1.3	24	65	6.1	0.12	0.4	0.7	A	BRIONES VALLEY
8	16	7	49.6	36-30.1	121- 8.1	10.1	1.8	26	72	3.6	0.25	0.8	1.6	B	BICKMORE CANYON
8	16	19	50.8	36-30.3	121- 8.1	10.4	1.7	21	46	3.9	0.21	0.7	1.4	B	BICKMORE CANYON
8	17	4	57.8	38-48.7	122-48.4	3.4	0.5	9	80	3.5	0.16	0.9	3.7	B	THE GEYSERS
8	18	21	49.9	37-54.3	122-10.1	11.2	1.8	22	52	5.8	0.11	0.4	0.6	A	BRIONES VALLEY
8	21	59	28.9	38-48.1	122-48.7	1.2	1.2	12	60	3.6	0.08	0.3	0.2	A	THE GEYSERS
9	C	20	32.0	36-44.7	121- 4.6	4.3	1.7	22	111	9.5	0.12	0.4	0.5	B	PANOCHE PASS
9	2	16	48.3	37-54.5	122-10.4	10.6	1.3	18	42	6.1	0.14	0.5	0.8	A	BRIONES VALLEY
9	4	48	45.3	37- 9.2	121-33.9	6.2	1.0	14	107	5.3	0.11	0.5	1.2	B	MT SIZER
9	5	18	40.8	36-48.3	121-32.3	6.3	2.0	52	38	3.2	0.20	0.4	0.6	B	SAN JUAN BAUTISTA
9	5	34	16.2	37-54.3	122- 9.9	10.4	2.5	27	52	5.6	0.13	0.4	0.6	A	BRIONES VALLEY
9	5	46	39.8	37-54.1	122- 9.9	11.2	2.2	25	51	5.7	0.11	0.3	0.5	A	BRIONES VALLEY
9	7	40	25.6	38-48.2	122-48.5	1.8	1.3	15	61	3.8	0.06	0.2	0.2	A	THE GEYSERS
9	8	48	43.0	36-34.5	121-10.4	11.9	1.6	24	59	1.5	0.13	0.4	0.8	A	BICKMORE CANYON
9	9	14	18.0	37-56.3	122-10.2	10.3	0.9	14	106	5.6	0.07	0.4	0.6	B	BRIONES VALLEY
9	10	55	42.4	39- 2.1	123- 4.1	4.0	1.7	19	175	4.3	0.14	0.9	0.9	B	PURDYS GARDENS
9	15	47	57.9	38-49.3	122-47.9	1.9	0.9	11	61	3.9	0.10	0.3	0.3	A	THE GEYSERS
9	22	39	12.0	38-48.2	122-49.0	1.3	1.7	23	51	3.3	0.09	0.2	0.2	A	THE GEYSERS
10	0	21	51.4	37-56.9	122-11.3	7.8	1.1	16	114	6.0	0.18	0.9	1.4	B	BRIONES VALLEY

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
JAN 10	2	55	35.7	37-52.8	122-14.5	10.2	1.6	25	65	0.7	0.12	0.4	0.8	A	BRIONES VALLEY
10	3	7	12.8	37-52.7	122-14.9	10.8	1.2	13	71	9.7	0.14	0.7	1.8	A	BRIONES VALLEY
10	4	22	22.6	38-58.5	123- 1.5	4.1	1.5	21	106	7.3	0.12	0.4	0.5	B	HOPLAND
10	5	8	7.7	37-54.8	122-17.0	5.4	2.5	55	38	6.0	0.13	0.3	0.3	B	RICHMOND
10	7	13	9.1	37-34.9	121-48.1	4.3	1.6	31	95	9.1	0.14	0.4	0.3	B	LA COSTA VALLEY
10	7	30	10.7	36-41.4	121-21.8	4.0	1.4	27	42	2.8	0.15	0.4	0.6	A	PAICINES
10	9	24	40.1	38-48.6	122-49.7	1.0	0.9	9	97	2.1	0.05	0.2	0.2	B	THE GEYSERS
10	10	7	10.0	36-40.3	121-18.2	5.7	2.4	49	80	2.9	0.14	0.3	0.4	A	PAICINES
10	10	24	35.0	37-34.3	121-19.6	5.6	1.6	13	146	27.5	0.19	1.3	0.9	C	SOLYO
10	15	27	57.5	38-48.2	122-48.4	1.6	1.0	9	75	3.9	0.07	0.3	0.3	A	THE GEYSERS
10	16	48	31.3	37-54.4	122-10.1	9.4	1.6	31	37	5.8	0.14	0.4	0.7	A	BRIONES VALLEY
10	16	50	49.8	38-48.3	122-46.8	3.1	1.1	13	67	2.1	0.12	0.5	0.3	A	THE GEYSERS
10	17	9	43.9	36-55.0	121-28.6	7.5	1.6	44	56	2.8	0.10	0.2	0.5	A	SAN FELIPE
10	17	55	37.1	37-31.9	121-54.3	5.9	1.6	27	58	3.4	0.12	0.4	0.5	A	NILES
11	4	13	39.3	37-35.5	121-58.7	5.6	1.5	18	84	4.8	0.10	0.4	0.4	A	NILES
11	6	5	58.1	38-48.4	122-49.1	1.2	1.5	20	51	2.9	0.08	0.2	0.2	A	THE GEYSERS
11	12	15	8.8	36-57.8	121-40.4	8.4	1.2	17	45	3.7	0.06	0.3	0.7	A	WATSONVILLE EAST
11	16	3	59.7	36-37.5	121-16.4	5.8	1.4	16	55	3.6	0.17	0.7	1.2	B	MT JOHNSON
11	17	27	25.7	36-28.2	121- 5.6	8.9	1.7	24	62	4.7	0.18	0.6	1.3	B	TOPO VALLEY
11	20	26	10.5	36-27.4	121- 4.8	5.9	1.3	18	81	6.0	0.12	0.5	1.2	B	TOPO VALLEY
11	21	24	13.2	36-55.0	121-29.1	4.4	1.3	29	54	2.0	0.11	0.3	0.3	A	SAN FELIPE
12	0	4	14.5	38-30.8	122-45.1	2.8	1.4	14	69	4.9	0.10	0.6	0.4	A	HEALDSBURG
12	7	15	47.7	36-30.1	121- 8.2	9.0	1.3	21	72	3.6	0.25	0.9	1.8	B	BICKMORE CANYON
12	7	53	13.1	38-48.9	122-47.9	2.3	1.9	24	43	3.9	0.11	0.3	0.2	A	THE GEYSERS
12	9	15	26.8	35-59.0	120-33.8	2.4	1.3	10	83	9.2	0.06	0.3	0.2	B	STOCKDALE MTN
12	10	54	50.2	38-48.8	122-48.0	2.2	1.5	14	59	3.9	0.09	0.3	0.2	A	THE GEYSERS
12	11	8	35.7	38-48.5	122-48.3	2.8	1.0	10	76	3.7	0.04	0.2	0.2	A	THE GEYSERS
12	15	25	36.9	36-31.0	121- 8.1	8.2	1.0	14	89	4.6	0.11	0.6	1.1	A	BICKMORE CANYON
12	15	49	3.2	36-42.6	121-14.5	5.1	1.4	19	87	5.1	0.10	0.3	0.4	B	CHERRY PEAK
12	18	59	52.0	36-11.6	120-29.4	2.3	1.5	16	92	12.1	0.16	1.0	1.6	C	ALCALDE HILLS
12	20	49	42.0	36-54.3	121-30.5	5.3	1.1	15	63	1.8	0.09	0.5	0.9	A	CHITTENDEN
12	21	24	48.9	36-20.3	121-50.8	6.7	1.8	34	198	13.8	0.18	1.0	1.2	C	BIG SUR
12	23	36	10.5	36-57.9	121-40.4	7.1	1.3	17	65	2.3	0.14	0.6	1.1	A	WATSONVILLE EAST
13	2	46	0.3	38-54.7	122-40.7	1.2	1.2	8	146	3.1	0.08	0.6	0.3	B	CLEARLAKE HIGHLANDS
13	5	19	39.4	38-48.2	122-49.8	1.6	1.2	15	60	2.6	0.05	0.2	0.1	A	THE GEYSERS
13	5	40	37.1	37-19.9	122-22.1	5.0	1.6	23	164	2.8	0.11	0.4	0.8	B	LA HONDA
13	9	27	52.5	38-48.8	122-48.3	2.3	1.0	11	84	3.5	0.07	0.3	0.2	A	THE GEYSERS
13	9	49	53.6	38-48.2	122-46.7	3.8	0.6	8	85	2.0	0.06	0.4	0.4	A	THE GEYSERS
13	21	6	59.5	37-20.5	121-41.4	6.9	1.1	16	126	4.2	0.18	0.8	2.0	B	LICK OBSERVATORY
14	2	36	4.5	36-46.5	121-24.3	5.6	2.0	32	34	2.9	0.19	0.4	1.0	B	HOLLISTER
14	3	57	19.7	38-48.8	122-48.4	3.6	1.2	16	53	3.4	0.13	0.5	0.5	A	THE GEYSERS
14	7	49	38.3	38-49.2	122-48.0	1.6	2.1	26	38	3.7	0.09	0.2	0.2	A	THE GEYSERS
14	8	11	29.9	36-14.1	120-50.3	7.1	1.8	23	82	4.5	0.22	0.8	1.6	B	MONARCH PEAK
14	8	38	38.6	38-59.0	122-36.8	0.2	1.5	7	111	4.8	0.15	1.4	1.0	B	LOWER LAKE
14	8	58	21.7	36-57.9	121-40.6	10.2	1.2	28	35	2.1	0.12	0.4	0.8	A	WATSONVILLE EAST

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
JAN 14	9	32	49.1	36-57.5	121-38.0	4.3	1.7	46	37	4.2	0.15	0.3	0.3	B	WATSONVILLE EAST
14	13	35	32.5	39- 5.1	122-43.4	0.7	1.4	7	182	10.0	0.09	1.0	1.2	C	CLEARLAKE OAKS
14	16	15	9.6	36-36.6	121-16.1	6.4	1.7	30	39	3.9	0.16	0.4	0.9	B	MT JOHNSON
14	16	48	34.4	36-58.1	121-38.0	4.1	1.1	29	38	4.6	0.17	0.4	0.4	B	WATSONVILLE EAST
14	19	28	35.6	36-40.6	121-23.3	12.0	2.1	51	31	2.5	0.19	0.4	0.5	B	MT HARLAN
14	19	47	27.9	36- 0.4	120-35.1	2.2	1.8	11	62	7.1	0.09	0.4	0.4	B	SMITH MTN
15	2	14	44.9	35-46.5	121-17.0	6.6	2.1	22	187	15.7	0.16	0.8	1.2	C	BURRO MTN
15	3	51	53.4	36- 0.3	120-35.5	1.5	1.5	9	97	7.2	0.09	0.4	0.4	B	SMITH MTN
15	4	25	13.7	36-52.9	121-37.9	6.1	2.4	63	56	3.7	0.22	0.4	0.5	B	WATSONVILLE EAST
15	13	7	1.3	37-23.0	121-44.2	5.0	1.4	24	137	3.1	0.21	0.8	0.7	C	MT DAY
16	1	50	44.5	36-29.3	121- 5.8	9.1	1.6	21	81	3.1	0.13	0.5	0.9	A	TOPO VALLEY
16	1	52	15.9	36-29.3	121- 5.4	8.0	1.0	14	84	2.7	0.10	0.5	0.8	A	TOPO VALLEY
16	2	23	3.5	38-48.5	122-48.8	3.8	1.5	21	44	3.2	0.13	0.4	0.5	A	THE GEYSERS
16	3	40	10.1	36-40.5	121-19.4	11.1	1.4	22	38	4.2	0.15	0.5	1.1	A	PAICINES
16	4	40	58.5	36-41.5	121-23.8	6.8	1.2	22	58	1.5	0.17	0.6	1.3	B	MT HARLAN
16	18	25	51.1	38-52.1	122-43.0	4.0	1.2	9	87	0.7	0.11	0.8	0.7	A	WHISPERING PINES
16	22	53	43.5	39-21.3	122-45.2	0.2	1.8	9	305	25.9	0.13	7.0		D	POTATO HILL
16	23	40	24.1	36- 8.4	120-41.1	5.6	1.5	11	132	1.8	0.10	0.7	0.8	B	PRIEST VALLEY
17	0	9	33.4	36- 8.4	120-41.0	6.1	1.6	13	117	1.6	0.10	0.5	0.5	B	PRIEST VALLEY
17	0	55	3.3	36-56.8	121-35.2	3.8	1.4	22	35	1.2	0.09	0.2	0.2	A	CHITTENDEN
17	1	9	4.5	36- 8.4	120-41.1	6.1	1.8	11	135	1.8	0.11	0.8	0.9	B	PRIEST VALLEY
17	1	15	47.3	36- 7.8	120-41.3	6.2	1.4	10	103	2.4	0.17	1.1	1.4	B	PRIEST VALLEY
17	4	10	37.1	38-48.8	122-47.8	2.3	1.1	10	84	3.7	0.09	0.4	0.3	A	THE GEYSERS
17	5	8	13.5	38-48.7	122-49.6	1.0	1.3	13	58	2.0	0.09	0.3	0.3	A	THE GEYSERS
17	10	41	23.1	37-28.8	121-38.3	5.7	1.5	19	169	14.7	0.17	0.9	0.8	C	MT DAY
17	12	48	54.5	38-55.9	122-37.3	3.9	1.3	12	114	4.3	0.18	1.2	1.0	B	LOWER LAKE
17	13	29	39.8	37-33.0	121-56.1	5.5	1.3	23	95	6.6	0.14	0.4	0.6	B	NILES
17	20	32	46.2	36-40.7	121-20.7	3.8	1.5	18	57	3.1	0.17	0.5	0.5	B	PAICINES
17	21	27	14.8	36-37.2	121-16.2	8.5	1.7	27	46	3.5	0.16	0.4	0.9	B	MT JOHNSON
17	22	45	53.1	38-29.9	122-34.3	5.4	1.6	16	128	3.9	0.17	0.9	1.5	B	KENWOOD
17	23	31	27.3	36-55.9	121-28.1	5.2	2.2	61	50	5.9	0.12	0.2	0.3	A	SAN FELIPE
18	0	49	44.7	37-18.1	121-39.1	4.8	1.9	36	67	5.1	0.13	0.4	0.3	B	LICK OBSERVATORY
18	0	56	19.0	37-18.2	121-39.4	7.3	1.6	26	76	4.5	0.11	0.4	0.8	A	LICK OBSERVATORY
18	1	7	28.8	36-36.1	121-14.4	5.2	1.3	21	63	3.6	0.15	0.5	1.0	B	BICKMORE CANYON
18	9	55	2.3	36-29.1	121- 6.2	4.2	1.6	20	77	3.7	0.20	0.8	1.8	B	TOPO VALLEY
18	13	22	26.8	36-42.4	121-22.4	2.1	1.5	19	53	2.7	0.18	0.5	0.5	B	PAICINES
18	15	17	24.9	37-19.6	121-41.0	4.1	1.6	21	62	4.0	0.13	0.4	0.3	A	LICK OBSERVATORY
18	16	42	34.4	37-52.2	122-14.2	8.1	1.5	21	60	0.7	0.08	0.3	0.5	A	OAKLAND EAST
18	17	13	8.4	37-52.9	122-14.2	8.4	1.5	24	77	0.6	0.13	0.5	0.7	A	BRIONES VALLEY
18	17	17	14.6	38-48.3	122-46.5	1.7	1.3	11	69	1.8	0.10	0.4	0.3	A	THE GEYSERS
18	17	50	21.1	38-48.2	122-46.3	1.8	1.6	18	66	1.5	0.12	0.3	0.2	A	THE GEYSERS
18	19	26	24.0	36-58.7	120-16.2	3.6	2.1	21	145	50.0	0.16	1.0	0.5	C	FIREBAUGH NE
18	21	5	46.4	36-55.3	121-28.2	5.6	3.3	81	40	3.7	0.13	0.2	0.3	A	SAN FELIPE
18	21	8	17.5	36-55.7	121-28.3	4.2	1.3	25	69	3.4	0.12	0.4	0.3	A	SAN FELIPE
18	21	11	58.7	39-21.1	122-45.3	1.0	1.9	13	299	25.6	0.21	8.5		D	POTATO HILL

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
JAN 18	21	19	59.6	36-55.9	121-28.0	4.7	1.6	41	61	4.0	0.13	0.3	0.4	A	SAN FELIPE
18	21	22	26.1	36-55.7	121-28.1	5.2	2.4	75	38	3.7	0.14	0.2	0.3	A	SAN FELIPE
18	22	11	22.7	38-48.4	122-47.0	1.9	1.2	9	74	2.4	0.10	0.4	0.4	A	THE GEYSERS
18	22	14	7.9	38-48.3	122-46.3	1.9	1.5	15	69	1.5	0.11	0.3	0.3	A	THE GEYSERS
18	22	34	17.3	38-48.2	122-46.4	2.2	1.2	9	89	1.6	0.08	0.4	0.3	A	THE GEYSERS
18	22	47	38.1	36-55.8	121-28.1	4.9	1.6	32	60	3.8	0.13	0.3	0.5	A	SAN FELIPE
18	23	12	38.9	36-55.9	121-28.0	4.4	1.7	35	61	4.0	0.11	0.3	0.2	A	SAN FELIPE
19	0	48	25.4	36-55.7	121-27.8	6.0	1.3	22	67	4.2	0.12	0.4	0.8	A	SAN FELIPE
19	1	2	19.5	36-55.7	121-28.0	4.4	1.8	44	60	3.8	0.12	0.3	0.3	A	SAN FELIPE
19	1	50	11.6	37- 3.7	121-29.0	3.7	1.3	18	89	4.1	0.14	0.5	0.5	A	GILROY HOT SPRINGS
19	2	3	44.8	36-55.9	121-27.9	4.5	1.2	27	61	4.2	0.10	0.3	0.3	A	SAN FELIPE
19	2	12	19.7	36-55.9	121-28.1	8.3	3.6	86	40	3.9	0.16	0.3	0.4	B	SAN FELIPE
19	3	43	48.8	36-22.9	120-58.9	2.8	1.6	17	67	5.9	0.12	0.5	0.6	B	ROCK SPRING PEAK
19	3	56	28.8	36-22.9	120-58.8	2.5	2.0	22	66	5.9	0.12	0.5	0.4	B	ROCK SPRING PEAK
19	4	28	51.8	36-55.7	121-28.1	4.7	1.2	30	60	3.8	0.12	0.3	0.5	A	SAN FELIPE
19	4	35	0.8	38-48.7	122-48.3	3.9	1.4	15	54	3.5	0.15	0.6	0.8	B	THE GEYSERS
19	4	36	8.5	36-56.0	121-28.1	8.1	2.5	77	41	4.0	0.15	0.3	0.5	B	SAN FELIPE
19	4	57	6.3	36-55.7	121-28.0	4.3	1.8	46	60	3.8	0.11	0.2	0.2	A	SAN FELIPE
19	5	10	2.6	36-58.5	121-39.4	4.5	1.8	50	40	4.1	0.14	0.3	0.3	A	WATSONVILLE EAST
19	7	25	2.1	36-55.5	121-28.2	3.3	1.4	30	59	3.4	0.11	0.3	0.2	A	SAN FELIPE
19	8	26	42.4	36-55.6	121-28.3	4.2	1.2	30	63	3.4	0.11	0.3	0.2	A	SAN FELIPE
19	8	58	50.9	36-55.6	121-28.3	4.4	1.1	25	59	3.4	0.12	0.4	0.3	A	SAN FELIPE
19	9	15	43.5	36-55.6	121-28.3	4.1	1.0	23	63	3.3	0.11	0.3	0.3	A	SAN FELIPE
19	9	25	28.0	36-55.6	121-28.1	4.2	1.2	26	59	3.6	0.11	0.3	0.3	A	SAN FELIPE
19	9	42	33.7	36-55.6	121-28.1	4.6	1.7	44	60	3.7	0.13	0.3	0.4	A	SAN FELIPE
19	10	1	8.1	36-33.2	121-11.2	3.8	1.4	11	97	2.4	0.16	0.9	0.7	B	BICKMORE CANYON
19	12	30	2.1	38-32.8	122-45.7	6.8	2.0	30	41	3.4	0.16	0.5	1.2	B	HEALDSBURG
19	13	33	37.1	38-32.8	122-45.9	6.4	1.8	28	80	3.7	0.14	0.5	1.2	A	HEALDSBURG
19	14	3	25.6	36-55.6	121-28.2	4.9	1.8	45	59	3.5	0.12	0.3	0.3	A	SAN FELIPE
19	14	3	36.5	36-55.8	121-28.4	5.4	2.7	67	49	3.4	0.16	0.3	0.4	B	SAN FELIPE
19	17	43	38.9	36-55.4	121-28.4	4.6	1.8	49	50	3.1	0.14	0.3	0.3	A	SAN FELIPE
19	18	49	8.5	36-55.3	121-28.3	5.8	1.9	51	50	3.2	0.14	0.3	0.7	A	SAN FELIPE
19	20	12	0.3	37-52.5	122-14.3	8.9	2.4	60	36	0.4	0.16	0.3	0.4	B	OAKLAND EAST
20	1	13	3.3	36-55.7	121-28.1	4.6	1.6	43	60	3.8	0.12	0.3	0.3	A	SAN FELIPE
20	2	11	13.9	37-26.1	121-46.6	5.0	2.4	70	79	2.7	0.16	0.3	0.3	B	CALAVERAS RESERVOIR
20	4	0	4.1	36-54.3	121-29.5	4.5	1.3	45	46	1.9	0.10	0.2	0.2	A	SAN FELIPE
20	5	50	36.7	38-49.2	122-48.8	1.5	0.9	9	96	2.6	0.07	0.3	0.3	B	THE GEYSERS
20	7	52	10.6	38-33.1	122-45.4	5.3	1.1	16	67	3.0	0.16	0.8	1.7	B	HEALDSBURG
20	12	34	54.7	36-55.9	121-28.2	5.2	2.2	62	49	3.8	0.14	0.3	0.4	A	SAN FELIPE
20	15	19	25.8	38-48.7	122-48.2	2.2	0.8	8	80	3.7	0.10	0.5	0.4	A	THE GEYSERS
20	15	19	44.7	38-48.5	122-48.8	4.2	0.8	9	81	3.1	0.12	0.7	2.0	A	THE GEYSERS
20	17	48	48.2	38-48.3	122-48.3	0.4	1.4	12	65	4.0	0.09	0.3	0.4	A	THE GEYSERS
20	20	46	37.6	36-55.9	121-28.1	6.7	2.5	70	50	3.8	0.14	0.3	0.6	A	SAN FELIPE
21	0	58	0.0	37-52.3	122-14.5	7.3	2.0	38	61	10.5	0.12	0.3	0.4	B	OAKLAND EAST
21	1	51	35.7	36-58.8	121-40.0	4.5	1.9	47	38	3.9	0.18	0.4	0.4	B	WATSONVILLE EAST

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
JAN 21	2	14	44.6	38-47.1	122-46.1	3.5	1.2	15	70	2.2	0.12	0.5	0.4	A	THE GEYSERS
21	3	10	13.5	38-47.5	122-48.1	2.2	1.6	10	75	3.1	0.07	0.3	0.2	A	THE GEYSERS
21	5	0	7.7	37-52.8	122-14.3	11.8	1.1	13	75	9.6	0.07	0.4	0.9	A	BRIONES VALLEY
21	5	10	0.8	37-52.7	122-14.3	11.8	1.2	11	74	9.8	0.07	0.4	1.1	A	BRIONES VALLEY
21	5	26	5.1	37- 4.2	121-30.0	5.2	1.5	38	63	5.1	0.16	0.4	0.7	B	GILROY
21	5	33	46.0	37-51.2	121-58.6	6.7	1.5	17	67	7.3	0.11	0.4	0.4	B	DIABLO
21	5	44	16.2	37-46.8	121-57.8	7.2	1.0	12	86	1.8	0.04	0.2	0.2	A	DIABLO
21	5	46	2.3	37-32.7	121-46.0	6.4	1.3	14	80	9.6	0.09	0.4	0.6	B	LA COSTA VALLEY
21	5	53	24.8	37- 3.8	121-29.8	4.0	1.4	34	56	4.3	0.15	0.4	0.3	A	GILROY HOT SPRINGS
21	7	1	9.4	37-52.6	122-14.6	11.1	1.5	21	63	10.0	0.12	0.4	1.1	A	BRIONES VALLEY
21	7	28	30.8	35-59.8	120-33.6	4.4	2.1	15	87	9.6	0.21	0.9	1.1	B	STOCKDALE MTN
21	9	26	11.9	36-55.6	121-28.1	5.0	1.5	31	65	3.6	0.14	0.4	0.6	A	SAN FELIPE
21	14	31	14.7	36-24.8	121- 2.4	0.2	1.8	22	89	2.3	0.29	1.0	1.7	B	TOPO VALLEY
21	14	38	46.4	38-49.3	122-48.4	3.5	1.8	23	47	3.2	0.14	0.4	0.4	A	THE GEYSERS
21	17	30	9.6	37-47.1	121-48.0	10.0	2.3	25	81	2.9	0.16	0.6	0.8	B	TASSAJARA
21	18	41	24.4	36-55.6	121-28.1	4.8	1.5	41	59	3.6	0.11	0.2	0.3	A	SAN FELIPE
21	21	52	34.9	37-10.1	121-34.8	4.6	1.2	12	105	4.0	0.11	0.5	1.4	B	MT SIZER
22	2	22	38.7	36-55.7	121-28.0	4.4	1.7	37	66	3.8	0.12	0.4	0.2	A	SAN FELIPE
22	4	6	46.4	39- 3.0	123- 7.8	3.7	1.0	13	188	9.7	0.14	1.4	0.8	C	ELLEDGE PEAK
22	5	40	58.3	38-48.4	122-46.5	4.2	0.9	9	75	1.7	0.11	0.7	1.4	A	THE GEYSERS
22	10	47	12.1	37-46.6	121-47.7	8.9	1.6	18	138	3.9	0.09	0.4	0.6	B	TASSAJARA
22	12	18	26.7	36-35.3	121-13.8	6.2	3.0	47	31	3.9	0.14	0.3	0.5	A	BICKMORE CANYON
22	12	20	10.8	36-35.1	121-13.6	6.6	1.5	28	67	3.5	0.13	0.4	0.8	A	BICKMORE CANYON
22	12	24	21.4	36-35.2	121-13.7	6.0	1.6	31	31	3.8	0.13	0.3	0.5	A	BICKMORE CANYON
22	12	24	54.4	36-35.1	121-13.6	5.7	1.8	32	31	3.5	0.14	0.3	0.8	A	BICKMORE CANYON
22	14	7	12.6	38-48.5	122-47.0	4.1	0.6	8	77	2.5	0.09	0.6	0.6	A	THE GEYSERS
22	15	9	53.6	37-46.8	121-47.9	8.5	1.8	32	137	3.6	0.13	0.4	0.6	B	TASSAJARA
22	15	21	17.6	37-47.0	121-48.2	10.3	2.6	35	80	3.2	0.21	0.7	0.6	B	TASSAJARA
22	17	24	1.9	36-46.0	121-23.0	5.1	1.6	36	31	3.2	0.21	0.5	1.0	B	HOLLISTER
22	17	36	32.4	36-38.3	121-16.6	8.4	1.2	24	51	3.2	0.15	0.5	0.9	A	PAICINES
22	20	4	43.5	37-46.8	121-47.4	8.7	1.4	15	140	3.6	0.11	0.5	0.9	B	TASSAJARA
22	20	58	53.6	38-48.5	122-48.0	0.9	1.1	13	65	3.9	0.09	0.3	0.3	A	THE GEYSERS
23	4	39	58.3	37- 5.1	121- 8.1	5.6	1.2	19	187	3.7	0.16	1.1	0.9	C	PACHECO PASS
23	9	22	44.5	37-46.8	121-47.8	9.0	1.5	20	137	3.4	0.12	0.5	0.8	B	TASSAJARA
23	13	18	50.3	36-54.8	121-35.9	6.4	2.9	67	33	3.2	0.16	0.3	0.4	B	CHITTENDEN
23	14	44	2.7	36-55.0	121-35.6	6.8	1.5	30	45	3.5	0.16	0.4	0.9	B	CHITTENDEN
23	16	46	8.5	37-12.7	121-35.2	2.5	1.3	27	106	6.4	0.10	0.3	0.3	B	MT SIZER
23	17	45	50.2	37-52.4	122-14.4	8.9	2.8	61	36	0.6	0.16	0.3	0.4	B	OAKLAND EAST
23	22	46	2.7	36-38.6	121-17.6	4.1	1.4	20	58	3.2	0.14	0.5	0.7	A	PAICINES
24	7	35	21.4	37-47.0	121-47.4	8.3	1.3	14	174	3.3	0.14	0.9	0.9	B	TASSAJARA
24	8	6	19.7	36-43.4	121-10.6	5.8	1.1	23	82	6.6	0.09	0.3	0.9	B	CHERRY PEAK
24	9	29	30.5	38-48.1	122-48.1	1.8	0.8	11	70	4.0	0.08	0.3	0.2	A	THE GEYSERS
24	11	33	38.1	38-48.6	122-47.7	3.8	0.8	10	78	3.4	0.06	0.3	0.3	A	THE GEYSERS
24	12	10	21.2	37-52.4	122-14.0	8.3	1.7	38	59	0.4	0.15	0.4	0.6	A	OAKLAND EAST
24	13	10	48.4	37-52.2	122-14.1	8.3	1.8	43	47	0.7	0.14	0.3	0.5	A	OAKLAND EAST

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
JAN 24	13	43	1.7	38-43.8	122-22.9	7.5	1.4	14	146	10.1	0.12	0.7	2.3	C	AETNA SPRINGS
24	14	51	14.4	37-52.3	122-14.1	7.2	1.9	51	47	0.5	0.16	0.3	0.4	B	OAKLAND EAST
24	15	35	59.9	37-52.3	122-14.1	8.3	1.8	31	61	10.6	0.12	0.3	0.7	B	OAKLAND EAST
24	15	43	5.6	37-52.3	122-14.2	7.2	1.8	34	47	0.5	0.12	0.3	0.4	A	OAKLAND EAST
24	15	55	46.1	37-52.2	122-14.2	7.9	2.9	53	35	0.7	0.15	0.3	0.4	B	OAKLAND EAST
24	17	14	38.0	36-33.6	121-11.3	5.6	0.8	12	65	1.7	0.13	0.6	1.1	A	BICKMORE CANYON
24	18	5	16.4	35-47.1	120-22.3	5.5	3.7 R	17	125	11.4	0.19	0.9	0.9	C	CHOLAME VALLEY
24	19	47	49.3	36-51.4	121-36.9	6.2	0.8	16	109	3.6	0.25	1.4	1.9	B	SAN JUAN BAUTISTA
24	21	31	59.0	37-52.3	122-13.9	6.7	2.0	44	60	0.7	0.13	0.3	0.4	A	OAKLAND EAST
24	21	59	41.6	38-48.7	122-47.7	4.0	0.8	9	81	3.6	0.14	0.8	1.0	A	THE GEYSERS
24	23	8	50.2	37-52.3	122-14.2	7.5	1.3	17	72	0.6	0.14	0.6	1.0	A	OAKLAND EAST
25	2	55	9.0	38-48.0	122-48.7	2.2	1.2	15	62	3.8	0.05	0.2	0.1	A	THE GEYSERS
25	3	13	32.4	36-26.9	121- 4.3	8.5	1.9	40	64	5.5	0.21	0.5	0.9	B	TOPO VALLEY
25	3	35	56.6	36-31.1	121- 8.9	6.7	2.0	25	46	3.8	0.24	0.7	1.6	B	BICKMORE CANYON
25	7	20	50.4	36-27.6	121- 4.9	6.4	1.5	24	80	5.6	0.12	0.4	0.9	A	TOPO VALLEY
25	13	7	31.0	36-35.8	121-14.1	4.6	1.5	22	64	3.9	0.16	0.5	1.1	B	BICKMORE CANYON
25	14	1	58.7	37-52.4	122-14.5	8.4	1.2	15	70	10.4	0.10	0.5	0.9	B	OAKLAND EAST
25	15	15	25.5	36-27.4	121- 3.2	10.1	1.7	22	78	4.8	0.18	0.7	1.2	B	TOPO VALLEY
26	1	24	10.6	36-40.6	121-11.7	3.6	1.1	16	123	2.5	0.12	0.6	0.4	B	CHERRY PEAK
26	3	7	34.3	36-55.6	121-28.2	4.3	1.2	28	59	3.5	0.10	0.3	0.2	A	SAN FELIPE
26	14	16	41.0	35-55.4	120-29.2	4.3	1.5	8	124	2.7	0.12	0.9	0.8	B	PARKFIELD
26	14	55	31.5	36-59.5	121-22.8	5.3	1.3	35	89	2.1	0.17	0.5	1.2	B	SAN FELIPE
26	19	23	25.7	36-54.1	121-29.5	5.8	1.3	22	83	2.2	0.08	0.3	0.5	A	SAN FELIPE
26	20	22	49.4	36-30.4	121- 8.2	6.3	1.4	17	87	3.8	0.27	1.1	2.2	B	BICKMORE CANYON
26	21	41	45.0	36-37.9	120-47.0	0.9	2.0	32	195	3.6	0.15	0.8	0.7	C	MERCY HOT SPRINGS
26	23	0	35.8	38-46.5	122-55.0	1.6	1.0	15	67	6.5	0.11	0.4	0.4	B	ASTI
27	0	2	17.2	38-48.4	122-46.3	1.5	1.0	8	89	2.7	0.04	0.2	0.2	A	THE GEYSERS
27	4	43	31.6	38-27.3	122-41.0	9.3	1.5	19	73	7.6	0.12	0.5	1.2	A	SANTA ROSA
27	15	12	43.5	38-48.1	122-48.6	1.2	1.3	12	62	3.8	0.07	0.2	0.2	A	THE GEYSERS
27	20	59	59.9	38-48.1	122-48.0	1.1	1.7	18	57	3.9	0.09	0.3	0.3	A	THE GEYSERS
27	21	42	23.7	36-25.7	121- 2.8	5.7	1.8	19	86	2.5	0.10	0.4	0.8	A	TOPO VALLEY
28	0	25	54.3	36- 1.1	120-51.6	14.9	1.6	12	157	16.0	0.07	0.6	0.3	B	PANCHO RICO VALLEY
28	2	3	13.5	38-48.0	122-48.1	3.8	2.3	32	35	3.8	0.12	0.3	0.3	A	THE GEYSERS
28	7	37	23.5	36- 2.3	120-37.2	4.6	3.0	26	60	4.1	0.25	0.8	0.8	B	SMITH MTN
28	8	9	10.0	37-43.3	121-59.0	6.4	1.4	24	65	7.4	0.10	0.3	0.4	B	DUBLIN
28	9	55	55.0	36-58.7	121-38.9	7.1	1.3	26	77	4.2	0.10	0.3	0.6	A	WATSONVILLE EAST
28	9	56	33.6	36-58.8	121-38.7	6.7	1.4	19	62	4.2	0.09	0.3	0.7	A	WATSONVILLE EAST
28	10	24	4.4	36-58.9	121-38.9	6.2	1.2	20	79	4.0	0.11	0.4	0.8	A	WATSONVILLE EAST
28	10	40	43.5	36-34.3	121-12.5	4.5	2.5	48	37	1.8	0.18	0.4	0.4	B	BICKMORE CANYON
28	15	49	0.0	36-43.3	121-25.0	4.6	1.4	24	62	3.1	0.19	0.6	0.8	B	MT HARLAN
28	18	55	8.3	38-48.6	122-47.9	2.2	1.0	15	71	3.8	0.08	0.3	0.2	A	THE GEYSERS
28	20	16	40.3	38-48.6	122-48.8	1.1	1.2	14	65	3.1	0.08	0.2	0.2	A	THE GEYSERS
29	0	23	44.6	37- 2.3	121-43.1	7.4	1.1	12	80	2.0	0.07	0.4	0.7	A	MT MADONNA
29	3	1	44.3	36-58.3	121-40.6	8.2	1.3	31	45	4.2	0.14	0.4	0.9	A	WATSONVILLE EAST
29	4	41	24.0	38-48.5	122-49.9	1.1	1.2	19	44	2.0	0.07	0.2	0.1	A	THE GEYSERS

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
JAN 29	7	53	26.3	38-48.1	122-48.3	1.6	1.5	21	45	4.1	0.07	0.2	0.1	A	THE GEYSERS
29	10	35	43.9	36-57.8	121-40.2	8.5	1.5	35	43	3.6	0.14	0.4	0.8	A	WATSONVILLE EAST
30	4	10	37.7	36-27.0	121- 4.3	7.5	2.0	35	64	5.4	0.15	0.4	0.9	B	TOPO VALLEY
30	6	44	51.0	38-48.3	122-48.8	1.0	1.2	10	67	3.4	0.03	0.1	0.1	A	THE GEYSERS
30	6	45	47.5	38-48.1	122-48.7	0.9	1.2	10	63	3.6	0.05	0.2	0.2	A	THE GEYSERS
30	7	9	58.5	36- 0.4	120-52.4	13.5	1.3	16	92	17.7	0.13	0.8	0.6	B	PANCHO RICO VALLEY
30	13	22	35.8	39- 3.1	122-54.8	1.0	1.7	9	140	9.2	0.13	1.0	1.4	B	LAKEPORT
30	14	52	0.7	36-21.2	120-35.5	6.1	2.0	30	145	20.5	0.23	1.0	1.3	C	SANTA RITA PEAK
30	17	49	18.3	36-56.4	121-35.7	5.8	1.1	18	61	2.3	0.12	0.4	0.4	A	CHITTENDEN
30	18	3	19.2	35-59.9	120-35.1	1.4	1.7	10	60	8.0	0.07	0.3	0.3	B	STOCKDALE MTN
30	19	44	19.0	36-29.9	121- 7.1	6.6	1.4	19	72	4.0	0.21	0.8	1.5	B	TOPO VALLEY
30	19	58	58.2	36-30.5	121- 8.2	5.8	1.3	12	94	3.8	0.27	1.4	2.8	B	BICKMORE CANYON
30	22	38	36.4	36-29.8	121- 6.8	5.6	1.4	20	80	3.6	0.18	0.7	0.5	B	TOPO VALLEY
31	2	24	35.6	37-17.9	121-39.2	6.7	1.7	36	68	4.8	0.11	0.3	0.9	A	LICK OBSERVATORY
31	3	57	24.4	36- 0.3	120-34.9	1.8	1.8	11	61	7.8	0.11	0.5	0.5	B	SMITH MTN
31	4	52	26.4	37-14.8	121-38.5	7.7	1.2	22	94	3.0	0.10	0.3	0.8	B	MORGAN HILL
31	12	11	9.7	38-48.5	122-48.8	0.7	1.2	16	61	3.1	0.11	0.3	0.3	A	THE GEYSERS
31	13	3	51.8	36-29.4	121- 6.4	4.1	1.0	16	80	3.6	0.16	0.7	1.7	B	TOPO VALLEY
31	16	8	6.1	38-47.8	122-48.4	2.2	1.3	14	68	3.8	0.06	0.2	0.2	A	THE GEYSERS
31	21	29	27.5	36-28.3	121- 5.3	10.0	1.4	21	78	5.0	0.21	0.8	1.6	B	TOPO VALLEY
FEB 1	0	0	14.8	36- 1.4	120-36.8	0.3	1.6	11	78	5.4	0.13	0.5	0.6	B	SMITH MTN
1	0	17	53.0	38-48.3	122-49.3	1.0	1.1	14	53	2.8	0.08	0.3	0.2	A	THE GEYSERS
1	0	41	42.2	37-33.9	121-38.8	4.8	1.6	17	143	3.4	0.28	1.3	0.8	C	MENDENHALL SPRINGS
1	7	55	25.8	36-37.7	121-16.8	5.1	1.9	39	45	3.6	0.16	0.4	0.5	B	PAICINES
1	12	36	33.4	36-31.3	121- 9.9	8.9	1.3	27	35	3.6	0.27	0.8	1.6	B	BICKMORE CANYON
2	0	43	32.9	38-48.7	122-48.4	3.0	0.7	12	76	3.4	0.09	0.4	0.2	A	THE GEYSERS
2	2	20	12.7	38-47.5	122-50.3	1.8	1.3	20	42	3.1	0.11	0.3	0.2	A	THE GEYSERS
2	3	13	1.2	36-55.9	121-33.1	4.9	1.3	27	41	4.0	0.12	0.3	0.9	A	CHITTENDEN
2	5	1	17.5	38-47.7	122-48.4	2.3	0.9	9	73	3.7	0.05	0.3	0.2	A	THE GEYSERS
2	7	8	18.5	36- 1.5	120-36.2	3.1	1.3	11	69	4.9	0.06	0.5	0.5	A	SMITH MTN
2	13	36	13.2	37-15.6	121-58.4	5.3	1.2	19	85	6.5	0.07	0.2	0.4	B	SAN JOSE WEST
2	17	27	23.2	38-48.3	122-46.6	2.1	1.0	10	83	1.8	0.09	0.4	0.3	A	THE GEYSERS
2	17	27	37.3	38-48.5	122-46.4	1.7	1.1	9	73	1.7	0.12	0.5	0.8	A	THE GEYSERS
2	19	29	51.9	38-48.2	122-46.6	2.2	0.7	8	87	1.9	0.07	0.3	0.3	A	THE GEYSERS
2	21	30	0.6	37-15.3	121-58.1	7.6	1.8	27	66	5.6	0.08	0.2	0.4	A	SAN JOSE WEST
2	23	30	57.7	36-56.5	121-24.7	7.0	1.8	49	78	4.6	0.10	0.2	0.5	A	SAN FELIPE
3	1	2	2.6	35-52.9	121-15.0	10.0	1.6	15	182	23.5	0.10	0.7	0.7	C	JOLON
3	1	11	8.8	36-44.3	120-57.0	2.3	1.4	9	107	12.1	0.13	0.8	0.6	B	CERRO COLORADO
3	2	21	32.4	36-56.9	121-35.2	4.0	1.3	19	51	1.0	0.09	0.3	0.2	A	CHITTENDEN
3	4	42	14.6	37- 8.4	122- 0.2	14.0	1.3	26	70	3.0	0.13	0.5	0.5	A	CASTLE ROCK RIDGE
3	5	25	12.5	36-31.9	121- 7.0	8.1	1.9	32	59	4.5	0.20	0.5	1.3	B	SAN BENITO
3	5	26	46.3	36-35.8	121-14.1	5.1	1.3	14	87	4.0	0.19	0.9	1.6	B	BICKMORE CANYON
3	8	41	1.1	36- 6.7	120-40.8	6.3	1.4	11	83	3.6	0.10	0.6	0.8	A	SLACK CANYON
3	10	57	20.9	37-51.4	122-14.2	5.3	1.0	15	63	9.8	0.14	0.6	0.6	B	OAKLAND EAST
3	13	18	41.0	36-54.9	122- 9.2	6.6	1.8	32	182	13.4	0.16	0.6	1.0	C	***OFFSHORE - MONTEREY BAY***

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
FEB 3	14	19	51.5	36-55.5	121-28.3	4.2	0.4	19	63	3.3	0.11	0.4	0.3	A	SAN FELIPE
3	19	29	36.2	36-54.4	121-29.0	4.4	1.3	31	49	2.4	0.09	0.2	0.2	A	SAN FELIPE
4	6	18	58.6	36-54.4	121-29.2	4.3	1.4	36	49	2.2	0.12	0.3	0.2	A	SAN FELIPE
5	4	32	57.0	36-36.7	121- 9.5	11.3	1.0	20	56	4.8	0.21	0.9	1.8	B	BICKMORE CANYON
5	5	14	6.5	36-55.8	121-28.0	4.3	1.3	28	60	3.9	0.10	0.3	0.2	A	SAN FELIPE
5	6	42	4.9	35-59.3	120-34.3	1.4	1.6	11	87	9.3	0.12	0.5	0.5	B	STOCKDALE MTN
5	8	32	10.6	36- 9.2	120-45.4	3.1	1.3	8	126	6.0	0.12	1.3	0.8	B	MONARCH PEAK
5	10	7	18.0	36-31.1	121- 9.1	5.5	1.5	18	62	3.8	0.21	0.7	1.6	B	BICKMORE CANYON
5	14	19	6.4	36- 3.4	120-38.9	1.7	1.4	10	111	5.0	0.07	0.5	0.5	B	SLACK CANYON
5	16	35	33.4	35-57.2	120-32.1	2.7	1.5	6	119	5.6	0.07	0.7	0.5	B	STOCKDALE MTN
5	16	36	24.0	35-57.3	120-32.1	2.9	1.3	9	76	5.6	0.06	0.4	0.3	B	STOCKDALE MTN
5	17	23	49.7	36-57.3	121-35.1	6.2	1.2	22	50	0.8	0.11	0.3	0.7	A	CHITTENDEN
5	20	45	16.2	36-57.3	121-35.0	5.8	1.8	43	34	0.9	0.12	0.3	0.6	A	CHITTENDEN
5	21	7	4.1	37-23.3	121-44.2	4.5	1.1	12	139	3.2	0.18	1.1	0.6	C	MT DAY
6	6	15	22.9	37-13.7	121-44.3	5.9	1.3	17	72	5.8	0.07	0.3	0.4	A	MORGAN HILL
6	17	31	39.1	36-40.6	121-20.5	4.1	1.8	33	33	3.1	0.14	0.3	0.4	A	PAICINES
6	19	42	21.7	38-48.4	122-48.9	1.2	1.2	12	59	3.1	0.07	0.2	0.2	A	THE GEYSERS
7	0	10	37.4	37-25.0	121-45.5	6.1	1.9	46	82	5.2	0.11	0.3	0.8	A	CALAVERAS RESERVOIR
7	2	13	22.6	36-29.3	121- 6.2	5.4	1.3	15	106	3.5	0.21	1.0	2.0	B	TOPO VALLEY
7	9	21	15.3	38-49.2	122-48.6	0.9	1.2	13	89	2.9	0.08	0.3	0.2	A	THE GEYSERS
7	10	12	34.2	36-33.9	121-12.3	8.3	1.4	21	69	1.8	0.13	0.5	0.9	A	BICKMORE CANYON
7	11	50	59.0	36-44.4	121-26.8	4.2	1.4	30	73	2.9	0.23	0.7	0.7	B	MT HARLAN
7	12	36	20.6	36-32.3	121-10.2	8.8	1.5	23	52	4.7	0.24	0.8	1.6	B	BICKMORE CANYON
7	12	41	5.2	36-58.1	121-38.9	2.0	1.1	20	46	4.3	0.16	0.5	0.5	B	WATSONVILLE EAST
7	13	3	22.5	36-56.1	121-33.0	5.3	1.6	46	42	3.9	0.10	0.2	0.6	A	CHITTENDEN
7	20	28	46.7	36-44.6	120-52.5	3.4	1.4	11	119	11.6	0.13	0.8	0.7	B	MERCY HOT SPRINGS
7	21	11	33.6	36-54.6	121-29.0	3.2	0.7	11	63	2.3	0.15	0.7	0.6	B	SAN FELIPE
7	23	45	11.2	38-47.5	122-48.3	2.1	0.8	9	76	3.2	0.08	0.4	0.3	A	THE GEYSERS
8	1	31	7.4	37- 8.2	121-31.1	8.3	1.0	18	118	7.8	0.13	0.5	1.4	B	MT SIZER
8	5	7	57.9	38-48.7	122-48.4	2.3	0.9	10	80	3.5	0.06	0.3	0.2	A	THE GEYSERS
8	5	29	41.3	38-48.3	122-48.5	1.5	0.7	9	75	4.1	0.08	0.3	0.3	A	THE GEYSERS
8	6	28	43.8	38-47.6	122-48.0	2.3	0.5	9	74	3.1	0.09	0.4	0.3	A	THE GEYSERS
8	10	37	40.2	36-46.3	121- 9.9	6.8	0.9	12	107	8.2	0.10	0.5	1.6	B	QUIEN SABE VALLEY
8	14	37	11.3	36-32.2	121-10.2	6.4	1.5	26	52	4.5	0.10	0.3	0.7	A	BICKMORE CANYON
8	19	19	8.1	38-56.8	122-35.3	4.9	1.0	7	139	7.0	0.05	0.5	1.1	B	LOWER LAKE
9	4	28	9.3	38-48.8	122-48.3	2.9	0.8	9	85	3.5	0.06	0.3	0.2	A	THE GEYSERS
9	5	15	41.2	37-12.3	122- 7.1	11.5	1.2	18	61	4.7	0.13	0.6	0.9	A	CASTLE ROCK RIDGE
9	5	36	34.4	36-31.4	121- 9.6	9.3	1.7	30	38	3.8	0.23	0.6	1.3	B	BICKMORE CANYON
9	6	4	57.8	36-55.1	121-28.7	5.0	0.9	20	60	2.6	0.13	0.4	0.9	A	SAN FELIPE
9	9	39	30.2	36-57.8	121-40.6	9.7	0.8	13	49	2.0	0.10	0.5	0.9	A	WATSONVILLE EAST
9	10	13	34.8	38-55.6	122-39.6	4.0	1.7	14	94	1.6	0.18	0.9	0.9	B	CLEARLAKE HIGHLANDS
9	15	34	29.7	36-38.5	121-17.8	4.9	1.4	24	60	3.5	0.14	0.4	0.7	A	PAICINES
9	17	48	45.6	37- 0.9	121-43.4	9.6	1.7	48	42	4.3	0.17	0.4	0.7	B	MT MADONNA
9	18	32	22.7	36-44.9	120-52.4	4.4	1.7	22	120	11.6	0.13	0.5	0.7	B	MERCY HOT SPRINGS
9	20	20	39.2	36-26.8	121- 4.3	9.0	2.6	61	62	5.4	0.23	0.5	0.6	B	TOPO VALLEY

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
FEB 9	20	21	25.1	36-27.3	121- 3.9	6.2	1.7	18	65	5.0	0.14	0.5	1.2	A	TOPO VALLEY
9	20	52	30.7	35-35.8	121-26.9	3.6	2.0	10	295	28.4	0.14	9.6	2.2	D	***OFFSHORE - SAN SIMEON***
9	21	11	57.7	38-48.3	122-46.5	1.8	1.0	10	83	1.7	0.11	0.4	0.4	A	THE GEYSERS
9	22	18	25.5	36-26.7	121- 4.1	7.0	1.6	25	64	5.0	0.16	0.5	1.2	B	TOPO VALLEY
9	23	17	27.6	36-26.8	121- 3.9	8.1	2.2	40	65	4.9	0.20	0.5	1.0	B	TOPO VALLEY
10	1	39	0.0	38-48.4	122-48.6	3.4	1.8	23	44	3.5	0.13	0.4	0.3	A	THE GEYSERS
10	4	9	20.7	39-15.8	122-41.8	4.4	1.8	11	221	18.6	0.08	1.2	5.9	D	FOUTS SPRINGS
10	4	38	5.8	38-48.2	122-46.2	2.0	1.9	24	52	1.4	0.10	0.3	0.2	A	THE GEYSERS
10	6	26	5.3	38-41.4	122-23.5	8.8	1.7	19	118	13.7	0.15	0.6	2.7	B	AETNA SPRINGS
10	6	35	46.0	37-28.9	121-37.7	5.9	1.7	34	151	12.5	0.15	0.5	0.5	C	MT DAY
10	7	52	5.9	36-13.1	120-49.9	7.4	2.9	40	81	3.4	0.24	0.6	0.9	B	MONARCH PEAK
10	9	43	49.8	36-26.7	121- 4.6	5.4	1.9	31	63	5.6	0.20	0.6	1.7	B	TOPO VALLEY
10	11	55	59.7	36-55.1	121-35.4	6.3	1.2	19	45	3.8	0.11	0.4	0.8	A	CHITTENDEN
10	16	37	45.8	36-38.1	121-17.2	3.5	1.8	23	52	3.6	0.20	0.6	0.6	B	PAICINES
10	17	32	10.5	37-42.6	122- 1.3	4.1	1.5	18	52	4.9	0.28	1.0	0.7	B	HAYWARD
10	19	18	51.7	38-48.1	122-48.1	3.4	2.6	26	69	4.0	0.18	0.5	0.4	B	THE GEYSERS
10	21	7	59.0	36-40.9	121-12.3	12.0	2.3	49	64	3.4	0.14	0.3	0.4	A	CHERRY PEAK
10	21	13	38.5	36-41.3	121-12.0	13.8	0.9	19	98	3.5	0.09	0.5	0.8	B	CHERRY PEAK
10	21	26	48.7	36- 1.9	120-36.6	2.9	1.4	7	96	4.4	0.15	1.9	1.9	B	SMITH MTN
11	2	30	48.0	36-54.7	121-29.0	2.1	1.1	16	92	2.3	0.09	0.3	0.2	B	SAN FELIPE
11	3	24	33.7	35-54.6	120-28.8	3.1	1.5	9	74	4.0	0.10	0.5	0.4	A	PARKFIELD
11	4	33	3.2	38-48.0	122-48.3	1.9	1.2	9	72	4.0	0.05	0.2	0.2	A	THE GEYSERS
11	5	7	58.2	36-42.7	121- 6.0	5.5	1.7	38	58	5.5	0.12	0.3	0.5	A	PANOCHE PASS
11	5	55	35.9	36-25.2	121- 2.0	2.1	1.2	12	86	1.5	0.04	0.2	0.1	A	TOPO VALLEY
11	8	26	41.1	36-37.9	121-16.4	4.1	1.5	20	68	3.5	0.15	0.5	0.7	A	PAICINES
11	11	3	31.8	36-27.8	121- 4.4	4.8	1.6	23	65	5.2	0.22	0.7	2.1	B	TOPO VALLEY
11	11	15	33.0	37-34.0	121-58.1	2.7	1.1	7	131	7.3	0.11	0.9	0.7	B	NILES
11	12	10	45.0	36-26.6	121- 3.8	6.0	2.2	33	65	4.6	0.11	0.3	0.8	A	TOPO VALLEY
11	15	24	50.3	35-59.8	120-34.8	1.7	1.6	12	60	8.2	0.12	0.6	0.5	B	STOCKDALE MTN
11	18	12	54.3	36- 5.3	120- 8.8	6.5	2.9	15	255	24.4	0.15	3.0	1.5	D	AVENAL
11	21	13	51.8	36-30.1	121- 8.4	8.0	1.1	13	83	3.3	0.18	0.9	1.6	B	BICKMORE CANYON
11	23	56	34.2	36-26.5	121- 4.3	8.1	1.2	16	121	5.1	0.21	1.1	2.0	B	TOPO VALLEY
12	0	26	55.2	37-36.1	121-55.9	9.5	1.4	21	61	4.0	0.10	0.3	0.8	A	NILES
12	1	2	19.0	35-28.3	120-34.1	1.7	2.0	8	320	44.8	0.04	5.9	62.7	D	SANTA MARGARITA
12	1	45	48.8	36-26.6	121- 4.2	7.7	2.7	38	64	5.1	0.19	0.5	1.0	B	TOPO VALLEY
12	1	47	11.0	36-26.7	121- 4.0	5.0	2.1	19	97	4.9	0.10	0.4	1.2	B	TOPO VALLEY
12	1	50	23.4	36-26.7	121- 4.1	6.5	1.8	27	64	5.0	0.15	0.5	1.2	B	TOPO VALLEY
12	1	54	56.5	36-26.7	121- 4.1	8.4	1.4	23	64	5.0	0.20	0.7	1.5	B	TOPO VALLEY
12	2	8	12.7	36-26.5	121- 4.2	8.3	1.2	21	63	5.0	0.20	0.8	1.6	B	TOPO VALLEY
12	3	46	9.3	38-48.5	122-48.8	1.2	1.0	8	81	3.1	0.04	0.2	0.2	A	THE GEYSERS
12	3	49	25.8	36-49.5	121-18.8	4.6	1.1	23	80	1.7	0.14	0.5	0.5	A	TRES PINOS
12	4	18	11.1	36-26.7	121- 3.9	7.9	1.6	26	64	4.8	0.19	0.7	1.4	B	TOPO VALLEY
12	9	31	31.8	36-37.3	121-16.5	6.1	2.6	46	49	3.6	0.18	0.4	0.6	B	MT JOHNSON
12	10	29	9.4	36-40.9	121-12.2	13.2	1.3	23	96	3.3	0.09	0.4	0.7	B	CHERRY PEAK
12	10	29	11.0	38-48.1	122-49.0	1.5	0.6	9	84	3.3	0.05	0.2	0.2	A	THE GEYSERS

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
FEB 12	11	17	4.7	36-26.7	121- 4.0	7.5	1.8	30	64	4.8	0.18	0.6	1.3	B	TOPO VALLEY
12	16	26	47.6	36-59.3	121-17.1	4.0	1.2	17	100	7.0	0.17	0.8	4.0	B	THREE SISTERS
12	23	49	26.6	36-44.8	121-20.8	11.1	3.1	70	26	3.3	0.18	0.3	0.4	B	PAICINES
12	23	54	54.9	36-44.8	121-21.1	10.5	1.3	14	89	3.3	0.18	1.1	2.2	B	PAICINES
13	0	25	31.8	36-44.6	121-21.0	9.4	1.7	33	54	3.6	0.18	0.5	0.9	B	PAICINES
13	1	13	10.6	36-44.7	121-20.8	10.8	1.5	22	74	3.5	0.15	0.6	1.0	B	PAICINES
13	1	30	57.7	36-44.6	121-21.0	11.1	1.1	14	83	3.6	0.12	0.8	1.3	A	PAICINES
13	2	50	40.7	38- 5.3	122-24.2	9.2	1.8	32	70	11.3	0.09	0.2	0.5	B	PETALUMA POINT
13	3	2	29.0	36-44.5	121-21.4	10.4	1.1	19	90	3.8	0.14	0.6	1.2	A	PAICINES
13	3	58	4.4	37-54.9	122-10.2	10.2	1.3	16	86	5.6	0.07	0.4	0.6	A	BRIONES VALLEY
13	3	59	24.2	36-44.5	121-20.5	10.4	0.7	12	75	3.6	0.15	1.1	2.3	B	PAICINES
13	3	59	36.7	36-57.6	121-40.3	9.7	1.1	17	50	2.2	0.09	0.4	0.8	A	WATSONVILLE EAST
13	4	19	9.5	36-44.7	121-20.8	10.9	1.0	17	82	3.4	0.14	0.8	1.3	A	PAICINES
13	6	1	46.4	36-44.4	121-20.9	10.0	1.8	37	34	3.5	0.21	0.5	0.9	B	PAICINES
13	6	55	2.4	37-44.7	122- 6.4	5.9	1.5	23	32	3.8	0.12	0.3	0.5	A	HAYWARD
13	9	4	58.4	36-44.8	121-20.9	9.6	2.4	66	26	3.3	0.18	0.3	0.6	B	PAICINES
13	13	43	26.8	36-34.6	121- 8.5	9.6	1.3	22	60	4.3	0.16	0.6	1.1	B	BICKMORE CANYON
13	15	24	31.8	37-28.8	121-49.8	5.7	1.8	37	65	4.3	0.16	0.4	0.6	B	CALAVERAS RESERVOIR
13	16	4	17.9	38-48.6	122-48.9	0.5	1.4	16	65	2.9	0.11	0.3	0.3	A	THE GEYSERS
13	16	22	51.0	37- 7.9	121-31.2	5.7	1.8	85	101	7.5	0.16	0.3	0.6	B	MT SIZER
13	20	1	45.9	36-32.4	121- 5.2	7.2	1.7	30	84	3.5	0.19	0.6	1.2	B	SAN BENITO
13	21	27	50.1	36-37.6	121-16.7	6.4	1.5	21	59	3.6	0.15	0.5	1.0	A	PAICINES
13	22	42	42.9	36-44.8	121-20.8	10.3	1.6	42	39	3.2	0.22	0.5	0.9	B	PAICINES
13	22	44	36.3	36-28.1	121- 5.6	9.6	1.3	17	89	4.9	0.16	0.7	1.4	B	TOPO VALLEY
13	22	55	38.5	36-55.6	121-28.2	4.3	1.5	26	64	3.5	0.11	0.3	0.3	A	SAN FELIPE
13	23	23	11.0	37-40.4	122-29.3	12.0	1.6	27	101	4.2	0.16	0.5	0.5	B	SAN FRANCISCO SOUTH
14	2	13	24.5	36- 4.2	120-39.4	5.3	2.7	33	65	5.6	0.24	0.7	0.8	B	SLACK CANYON
14	4	34	9.7	36-44.9	121-20.7	11.3	2.3	65	52	3.0	0.23	0.5	0.5	B	PAICINES
14	4	55	13.8	36-47.6	121-17.4	9.0	1.4	39	57	2.7	0.13	0.3	0.7	A	TRES PINOS
14	5	2	40.9	36-44.2	121-20.0	12.3	1.1	15	68	3.1	0.11	0.7	1.0	A	PAICINES
14	5	34	13.7	36-44.8	121-20.8	10.4	1.4	38	71	3.2	0.16	0.7	1.1	B	PAICINES
14	6	40	58.2	36-44.5	121-20.9	9.0	1.5	29	37	3.7	0.20	0.6	1.0	B	PAICINES
14	6	50	12.1	36- 0.4	120-34.7	4.1	3.5	11	123	7.2	0.12	1.1	1.2	B	SMITH MTN
14	8	32	6.4	36-32.9	121-11.0	6.6	1.8	40	42	3.0	0.19	0.4	0.9	B	BICKMORE CANYON
14	8	47	2.8	36-17.5	120-35.9	11.1	1.4	11	202	17.6	0.19	2.1	2.0	C	SANTA RITA PEAK
14	9	20	22.8	36-44.8	121-21.1	9.7	1.6	22	65	3.1	0.14	0.5	0.9	A	PAICINES
14	10	37	19.7	38-26.3	122-39.3	10.5	1.2	14	89	10.5	0.16	0.7	2.0	B	SANTA ROSA
14	15	5	5.7	36- 3.8	120-39.7	0.9	2.0	20	103	6.1	0.19	0.7	0.7	B	SLACK CANYON
14	19	0	26.0	36-55.5	121-28.0	4.3	0.9	21	65	3.7	0.09	0.3	0.3	A	SAN FELIPE
14	19	7	31.9	36-26.9	121- 4.1	7.8	1.5	23	64	5.2	0.18	0.6	1.3	B	TOPO VALLEY
14	19	26	39.2	37-52.6	122-14.4	12.1	1.0	10	80	9.9	0.08	0.6	1.3	A	BRIONES VALLEY
14	21	35	0.8	38-48.2	122-49.5	1.3	1.7	18	48	2.8	0.07	0.2	0.2	A	THE GEYSERS
14	21	38	29.8	38-48.2	122-49.4	1.4	0.9	10	57	2.9	0.05	0.2	0.2	A	THE GEYSERS
14	23	31	55.6	37-11.3	121-51.9	5.4	0.9	13	106	3.2	0.07	0.4	0.3	B	SANTA TERESA HILLS
14	23	40	55.3	36-43.7	121-21.3	8.2	1.4	21	39	2.3	0.14	0.5	0.9	A	PAICINES

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
FEB 14	23	46	23.1	38- 7.0	122-10.5	4.6	1.5	11	105	18.0	0.29	1.5	1.5	C	BENICIA
15	2	19	12.6	38-52.0	121-56.7	0.4	2.5	25	83	30.9	0.33	1.1		C	ZAMORA
15	4	9	42.2	38-48.7	122-48.7	3.7	1.9	23	43	3.1	0.14	0.4	0.4	A	THE GEYSERS
15	4	39	43.4	36-47.5	121-19.6	6.3	1.1	16	63	2.7	0.10	0.5	0.8	A	TRES PINOS
15	5	42	44.2	38-51.1	121-56.8	10.4	2.3	19	81	29.6	0.24	1.1	1.2	C	ZAMORA
15	7	6	4.1	36-55.5	121-28.1	4.0	1.0	16	65	3.6	0.08	0.3	0.3	A	SAN FELIPE
15	12	23	55.7	37-21.0	121-41.2	9.1	0.8	11	132	4.1	0.08	0.5	0.8	B	LICK OBSERVATORY
15	12	24	42.4	37-20.7	121-41.1	9.3	1.0	16	128	3.9	0.11	0.5	1.0	B	LICK OBSERVATORY
15	17	32	35.8	38-48.1	122-48.3	1.2	1.0	9	88	4.1	0.05	0.2	0.2	A	THE GEYSERS
15	17	38	5.2	38-48.3	122-46.7	3.2	0.9	8	82	2.0	0.10	0.5	0.4	A	THE GEYSERS
15	19	20	14.0	38-48.6	122-47.9	1.5	0.9	9	79	3.8	0.10	0.4	0.4	A	THE GEYSERS
15	22	23	42.9	36-13.2	120-49.2	6.4	1.4	13	103	2.3	0.13	0.7	1.2	B	MONARCH PEAK
16	0	24	5.9	36-36.2	121-13.7	3.0	2.2	35	51	3.3	0.20	0.5	0.4	B	BICKMORE CANYON
16	3	15	8.2	36-26.3	121- 3.4	6.8	1.4	19	85	3.8	0.10	0.4	0.8	A	TOPO VALLEY
16	3	43	17.2	36-31.2	121- 7.8	8.9	2.0	30	44	5.0	0.25	0.7	1.4	B	BICKMORE CANYON
16	4	32	27.3	38-49.2	122-48.2	3.2	1.3	13	81	3.4	0.15	0.6	0.7	A	THE GEYSERS
16	5	15	6.7	36-35.8	121-14.0	3.3	2.8	53	35	4.0	0.22	0.5	0.4	B	BICKMORE CANYON
16	5	52	23.8	38-48.6	122-48.5	3.5	1.2	17	69	3.4	0.13	0.5	0.5	A	THE GEYSERS
16	5	55	37.5	37-36.1	121-35.6	9.5	1.6	16	208	4.0	0.15	1.2	1.2	C	CEDAR MTN
16	6	33	0.6	36-41.0	121- 5.4	6.9	2.2	49	53	2.5	0.14	0.3	0.7	A	PANOCHE PASS
16	9	17	9.7	36-25.3	121- 2.6	6.6	2.0	25	47	2.3	0.11	0.4	0.8	A	TOPO VALLEY
16	11	11	46.9	37-57.0	122- 6.1	7.4	1.0	16	71	2.9	0.16	0.7	0.7	B	WALNUT CREEK
16	11	33	30.1	36-29.9	121- 7.0	4.9	1.5	22	66	3.9	0.17	0.6	1.3	B	TOPO VALLEY
16	13	32	6.8	36-26.4	121- 3.6	7.3	1.3	20	65	4.1	0.09	0.4	0.8	A	TOPO VALLEY
16	14	51	57.4	36-25.6	121- 2.3	11.7	1.5	22	56	1.8	0.20	0.8	1.6	B	TOPO VALLEY
16	15	43	11.6	36-22.2	120-59.3	7.9	2.2	27	60	6.8	0.16	0.5	1.1	B	LONOAK
16	16	0	58.7	36-40.2	121-18.6	6.6	1.1	20	65	5.1	0.12	0.4	1.0	A	PAICINES
16	16	25	32.1	38-48.2	122-46.5	2.6	0.9	9	89	1.8	0.09	0.4	0.3	A	THE GEYSERS
16	16	37	20.9	36-44.7	120-57.7	5.0	1.8	38	96	12.7	0.16	0.5	0.4	C	CERRO COLORADO
16	17	9	36.8	37-29.9	121-34.1	5.0	1.0	12	196	12.2	0.19	1.4	0.8	C	EYLAR MTN
16	18	32	29.3	36-10.8	120-47.0	11.2	3.0	41	82	3.9	0.22	0.6	0.6	B	MONARCH PEAK
16	19	33	0.1	38-48.4	122-47.7	3.6	1.2	18	59	3.4	0.11	0.4	0.3	A	THE GEYSERS
16	20	42	52.9	38-47.9	122-49.0	2.2	1.0	10	64	3.6	0.09	0.4	0.3	A	THE GEYSERS
16	22	18	55.2	36-47.9	121-18.2	7.2	2.0	55	33	2.1	0.19	0.4	0.9	B	TRES PINOS
17	0	8	45.5	36-55.2	121-28.2	5.4	1.3	27	65	3.4	0.14	0.4	0.8	A	SAN FELIPE
17	1	25	13.5	38-49.1	122-48.1	3.5	0.7	9	90	3.6	0.13	0.8	0.8	A	THE GEYSERS
17	6	16	11.8	36-54.3	121-38.8	5.9	1.8	51	37	3.2	0.20	0.4	0.5	B	WATSONVILLE EAST
17	6	27	7.7	36-54.5	121-29.5	4.6	1.4	45	49	1.7	0.11	0.2	0.3	A	SAN FELIPE
17	9	58	58.5	39- 4.5	123-31.3	13.3	2.6	14	271	20.3	0.12	5.0	1.2	D	SE 1/4 NAVARRO
17	13	22	23.7	36-12.1	120- 4.2	6.1	2.2	12	275	34.9	0.29	11.0	10.7	B	HURON
17	13	36	55.6	35-53.0	120-26.2	10.8	1.2	7	94	2.1	0.08	1.0	1.6	B	PARKFIELD
17	16	29	55.6	36- 1.7	120-35.8	2.5	1.4	8	67	4.6	0.07	0.5	0.4	A	SMITH MTN
17	18	3	10.0	37- 6.8	121-49.3	7.5	0.9	12	54	1.1	0.09	0.3	0.8	A	LOMA PRIETA
17	20	14	34.7	37- 0.9	121-43.6	10.6	1.4	33	41	4.6	0.13	0.4	0.8	A	MT MADONNA
17	23	22	6.8	36-29.5	121- 6.3	4.0	1.3	18	77	3.4	0.12	0.5	0.6	A	TOPO VALLEY

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
FEB 18	6	8	37.8	36-43.3	121-24.1	5.6	1.8	27	54	3.5	0.16	0.5	0.5	B	MT HARLAN
18	8	36	50.9	37-12.8	121-35.1	4.9	1.3	19	107	6.6	0.09	0.3	0.3	B	MT SIZER
18	9	24	60.0	36-27.3	121- 4.1	6.9	1.0	17	76	5.2	0.11	0.5	1.0	A	TOPO VALLEY
18	9	35	11.2	38-31.6	122-40.2	5.6	1.2	18	72	5.4	0.11	0.5	1.0	A	MARK WEST SPRINGS
18	11	54	30.9	38-49.1	122-48.1	3.4	0.9	15	50	3.7	0.14	0.6	0.6	A	THE GEYSERS
18	11	54	39.1	38-49.1	122-48.0	3.7	1.9	24	51	3.8	0.23	0.7	0.6	B	THE GEYSERS
18	19	52	18.6	37-50.5	121-57.1	4.9	2.3	54	77	5.6	0.14	0.3	0.2	B	DIABLO
18	23	7	4.0	36-32.3	121- 5.2	6.3	1.4	18	65	3.3	0.18	0.7	1.4	B	SAN BENITO
19	0	51	28.4	36-13.5	120-49.6	4.1	1.4	14	111	3.1	0.14	0.7	1.5	B	MONARCH PEAK
19	2	9	42.5	36-13.6	120-49.6	5.5	1.8	18	84	3.1	0.19	0.7	0.8	B	MONARCH PEAK
19	7	19	4.0	36-36.8	121-15.3	4.9	1.2	17	60	2.9	0.15	0.6	1.1	B	MT JOHNSON
19	15	36	24.1	37-42.9	122-31.3	4.6	1.7	18	101	9.5	0.15	0.6	0.8	B	***GULF OF THE FARALLONES***
19	15	37	12.5	37-42.9	122-31.3	5.5	2.0	34	101	9.7	0.15	0.4	0.5	B	***GULF OF THE FARALLONES***
19	15	49	39.8	37-43.1	122-31.4	5.0	2.1	32	100	9.6	0.14	0.4	0.5	B	***GULF OF THE FARALLONES***
19	16	44	12.3	36-36.3	121-15.3	7.1	1.3	19	63	3.6	0.19	0.7	1.4	B	MT JOHNSON
19	18	16	28.6	38-49.3	122-48.2	3.5	1.0	11	80	3.5	0.13	0.6	0.6	A	THE GEYSERS
19	20	19	54.3	36-29.3	121- 6.3	4.5	2.0	35	61	3.6	0.22	0.5	1.0	B	TOPO VALLEY
20	2	54	55.7	37- 7.4	121-54.6	11.4	1.3	19	64	5.4	0.10	0.4	0.8	A	LAUREL
20	4	38	11.7	36- 2.7	120-38.0	1.4	1.8	15	79	4.4	0.12	0.6	0.7	A	SLACK CANYON
20	8	25	45.2	36-22.3	120-59.2	8.9	2.0	35	59	7.1	0.15	0.4	0.7	A	LONOAK
20	8	26	56.0	36-21.9	120-59.1	6.7	1.2	16	81	7.3	0.14	0.6	1.5	B	LONOAK
20	8	45	57.2	36- 5.3	120-40.4	7.2	1.3	10	115	4.9	0.07	0.6	0.8	B	SLACK CANYON
20	11	4	55.1	38-48.4	122-49.0	1.6	0.9	9	85	3.0	0.03	0.1	0.1	A	THE GEYSERS
20	16	0	6.5	36-24.7	121- 0.7	0.9	1.6	15	82	1.6	0.11	0.5	0.4	A	TOPO VALLEY
20	20	29	55.7	36-14.1	120-49.7	5.0	1.5	14	123	3.7	0.13	0.7	1.4	B	MONARCH PEAK
21	6	42	41.8	37-28.5	121-37.9	5.4	1.4	16	150	12.7	0.19	0.9	0.8	C	MT DAY
21	7	33	15.8	36-26.6	121- 4.3	8.6	1.5	27	85	5.2	0.20	0.7	1.4	B	TOPO VALLEY
21	11	9	15.2	39-22.4	123-16.1	9.0	3.2R	26	181	42.9	0.15	2.1	0.7	C	SE 1/4 WILLITS
21	14	32	36.7	36- 0.0	120-52.6	8.1	2.0	26	93	18.5	0.15	0.6	1.3	C	SAN ARDO
21	16	25	9.1	37-23.9	121-44.5	4.4	1.4	15	84	4.6	0.16	0.7	0.4	B	MT DAY
21	16	25	36.4	38-48.3	122-49.2	1.4	1.3	12	54	3.0	0.11	0.4	0.3	A	THE GEYSERS
21	19	14	11.0	36-35.5	121-14.1	3.9	0.9	15	64	4.1	0.15	0.6	0.7	B	BICKMORE CANYON
21	19	27	42.8	38-49.3	122-48.2	1.0	1.0	9	82	3.4	0.08	0.3	0.3	A	THE GEYSERS
21	19	37	3.2	36-24.9	121- 0.4	11.3	2.6	34	71	1.5	0.19	0.5	0.9	B	TOPO VALLEY
21	20	40	0.2	36-24.6	121- 0.0	14.6	1.5	19	70	2.3	0.18	0.8	0.5	B	TOPO VALLEY
21	22	38	8.3	38-47.4	122-48.2	2.6	1.2	16	78	3.0	0.08	0.3	0.2	A	THE GEYSERS
21	22	43	57.8	36-55.5	121-28.2	4.6	1.3	31	59	3.6	0.12	0.3	0.6	A	SAN FELIPE
22	3	5	10.1	37-25.3	121-45.6	5.9	1.7	28	82	4.7	0.12	0.4	1.2	A	CALAVERAS RESERVOIR
22	3	41	49.7	36-13.5	120-49.3	4.6	1.1	12	114	2.7	0.16	1.0	1.7	B	MONARCH PEAK
22	6	19	49.8	36-44.6	120-55.8	4.3	1.3	8	108	14.0	0.05	0.3	0.4	B	CERRO COLORADO
22	7	13	46.9	36-54.5	122- 9.6	6.6	2.1	61	185	14.2	0.12	0.4	0.5	C	***OFFSHORE - MONTEREY BAY***
22	15	40	17.9	38-48.4	122-46.5	1.8	1.5	19	49	1.7	0.12	0.3	0.2	A	THE GEYSERS
22	19	55	2.3	37-10.1	121-32.9	5.8	1.6	55	100	6.8	0.19	0.4	1.0	B	MT SIZER
22	23	22	22.0	37-26.3	121-40.1	6.2	1.5	17	120	11.7	0.21	0.9	7.5	C	MT DAY
22	23	44	23.2	36-32.1	121-10.1	6.9	1.4	21	64	4.9	0.25	0.8	1.7	B	BICKMORE CANYON

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
FEB 22	23	48	3.3	36-27.0	121- 4.4	6.2	2.5	31	62	5.6	0.18	0.5	1.3	B	TOPO VALLEY
23	6	16	46.3	36-30.5	120-59.9	10.4	1.4	14	86	9.4	0.15	0.7	2.0	B	LLANADA
23	11	2	47.7	36-45.2	121-21.1	10.8	1.0	16	46	2.5	0.20	1.0	1.8	B	TRES PINOS
23	12	39	8.9	38-47.7	122-48.6	2.6	1.7	28	44	3.8	0.11	0.3	0.8	A	THE GEYSERS
23	16	18	34.1	35-59.4	120-34.7	4.2	1.4	11	90	9.0	0.18	1.4	1.5	B	STOCKDALE MTN
23	21	50	29.0	36-37.4	121-16.1	4.3	2.2	35	46	3.2	0.15	0.4	0.4	B	MT JOHNSON
23	22	32	47.3	38-41.8	122-23.6	11.9	1.4	8	121	13.0	0.10	1.0	3.1	B	AETNA SPRINGS
24	0	1	46.1	37- 9.9	121-37.3	3.8	1.5	27	92	0.4	0.13	0.4	0.3	B	MT SIZER
24	0	41	18.8	37-13.4	121-29.0	7.8	1.3	14	155	14.2	0.15	0.9	3.2	C	MISSISSIPPI CREEK
24	1	19	40.2	36-55.6	121-36.2	6.2	1.3	20	48	3.9	0.11	0.4	0.8	A	CHITTENDEN
24	11	1	31.6	38-49.1	122-47.8	3.5	1.9	20	41	3.9	0.12	0.4	0.3	A	THE GEYSERS
24	12	1	44.1	38-48.4	122-47.4	3.8	1.1	10	71	3.1	0.15	0.8	0.9	A	THE GEYSERS
24	15	50	50.2	36-42.4	121-22.7	3.7	2.4	46	41	3.1	0.19	0.4	0.4	B	MT HARLAN
24	15	53	31.5	36-42.8	121-22.9	3.7	1.6	26	54	3.5	0.17	0.5	0.5	B	MT HARLAN
24	17	22	25.0	36-53.6	121-24.6	7.9	1.3	27	65	1.7	0.11	0.4	0.7	A	SAN FELIPE
24	17	49	24.0	36-38.3	121-17.8	6.3	1.3	20	39	3.4	0.14	0.5	0.9	A	PAICINES
24	21	10	18.8	39- 0.2	123-20.8	3.6	1.2	8	199	15.1	0.06	0.4	0.3	C	SE 1/4 BOONVILLE
24	22	18	24.7	39- 0.2	123-20.8	5.3	1.3	11	199	15.2	0.13	0.9	12.5	D	SE 1/4 BOONVILLE
24	22	40	45.7	38-31.5	122-40.5	6.0	2.1	35	65	5.1	0.19	0.5	1.2	B	MARK WEST SPRINGS
24	23	23	10.9	39- 0.5	123-21.4	4.0	1.9	16	203	16.1	0.16	1.1	0.7	C	SE 1/4 BOONVILLE
24	23	36	31.2	39- 0.2	123-21.3	1.8	1.7	15	201	15.8	0.18	1.2		D	SE 1/4 BOONVILLE
25	5	58	39.4	37- 6.4	121-30.2	8.6	1.9	72	100	5.1	0.15	0.3	0.6	B	GILROY
25	6	31	52.8	36-41.1	121- 5.1	7.2	1.9	36	87	2.8	0.13	0.4	0.7	A	PANOCHE PASS
25	8	23	57.4	37-19.6	121-44.3	4.3	1.5	27	65	3.9	0.14	0.4	0.3	A	LICK OBSERVATORY
25	8	52	8.4	36-36.3	121-17.0	5.1	1.0	22	66	3.0	0.19	0.6	1.4	B	MT JOHNSON
25	9	47	43.1	38-48.3	122-47.6	1.7	1.1	11	75	3.3	0.07	0.2	0.2	A	THE GEYSERS
25	13	22	40.4	36-26.9	121- 4.4	7.8	2.1	46	63	5.6	0.23	0.5	1.1	B	TOPO VALLEY
25	13	34	1.0	37- 8.7	121-57.2	10.5	1.5	25	61	3.3	0.12	0.4	0.7	A	LOS GATOS
25	13	36	54.5	36- 7.3	120-49.8	14.0	1.2	12	111	9.9	0.10	0.9	0.5	B	PANCHO RICO VALLEY
25	14	16	18.1	36-26.9	121- 4.2	6.9	2.1	33	64	5.3	0.11	0.3	0.7	A	TOPO VALLEY
25	14	21	7.3	36-26.9	121- 4.4	7.8	2.2	45	63	5.6	0.18	0.4	0.9	B	TOPO VALLEY
25	16	14	11.2	36-35.3	121-14.1	8.5	1.3	20	82	4.2	0.16	0.6	1.1	B	BICKMORE CANYON
25	16	42	55.5	36-34.5	121-13.5	8.6	2.0	33	32	3.3	0.16	0.4	0.9	B	BICKMORE CANYON
25	19	51	20.3	38-49.1	122-48.1	2.4	1.0	9	93	3.7	0.08	0.4	0.4	B	THE GEYSERS
25	23	22	15.0	36-27.0	121- 4.5	8.2	1.5	25	63	5.8	0.18	0.6	1.3	B	TOPO VALLEY
25	23	28	8.5	36-27.1	121- 4.1	6.7	1.6	19	82	5.4	0.14	0.6	1.2	A	TOPO VALLEY
25	23	47	47.2	35-58.2	120-33.2	1.5	1.5	10	77	7.7	0.13	0.6	0.5	B	STOCKDALE MTN
26	0	4	6.4	37-19.6	121-44.4	4.3	1.8	29	65	4.0	0.11	0.3	0.2	A	LICK OBSERVATORY
26	0	48	38.0	35-25.5	120-32.0	11.2	1.9	9	277	43.2	0.10	3.2	1.1	B	SANTA MARGARITA
26	2	25	2.8	35-59.5	120-34.2	1.8	1.3	6	87	9.0	0.06	0.5	0.5	B	STOCKDALE MTN
26	3	57	54.4	36-27.2	121- 4.5	6.6	1.7	28	64	5.9	0.17	0.5	1.3	B	TOPO VALLEY
26	5	3	14.6	37-15.1	121-58.3	7.8	1.2	19	84	5.6	0.08	0.3	0.8	A	SAN JOSE WEST
26	7	0	50.3	36- 4.7	120-40.9	8.4	2.0	25	91	4.9	0.23	0.8	1.2	B	SLACK CANYON
26	7	0	50.3	36- 4.8	120-40.8	7.0	2.0	26	90	4.8	0.25	0.8	1.4	B	SLACK CANYON
26	16	6	8.0	38-48.8	122-48.1	1.3	2.0	19	40	3.8	0.12	0.3	0.3	A	THE GEYSERS

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
FEB 26	17	40	25.2	36- 5.4	120-40.1	5.4	1.2	8	129	5.2	0.12	1.0	0.7	B	SLACK CANYON
27	2	12	23.5	36-27.0	121- 4.3	8.2	1.6	24	64	5.6	0.17	0.6	1.7	B	TOPO VALLEY
27	4	47	6.9	37-12.5	121-36.7	4.5	2.1	37	83	5.2	0.10	0.3	0.3	B	MT SIZER
27	5	36	12.6	36- 2.6	120-38.7	2.8	1.1	7	124	5.4	0.04	0.4	0.3	B	SLACK CANYON
27	9	57	52.6	36-44.4	121-20.5	10.3	1.1	13	74	3.5	0.11	0.7	1.2	A	PAICINES
27	12	1	29.4	36-26.9	121- 4.5	9.0	1.4	15	84	5.8	0.22	1.1	2.8	B	TOPO VALLEY
27	17	4	55.9	36-37.3	121-16.2	4.0	1.4	20	56	3.4	0.20	0.7	0.7	B	MT JOHNSON
27	17	25	24.7	39-23.5	122-50.3	4.1	2.0	14	248	29.5	0.21	4.8	2.9	D	CROCKETT PEAK
27	18	13	28.6	38-49.0	122-48.2	0.4	1.2	13	80	3.5	0.13	0.6	0.4	A	THE GEYSERS
27	19	17	14.0	38-42.4	122-45.4	7.5	2.1	30	38	0.4	0.13	0.3	0.6	A	JIMTOWN
27	19	34	1.8	36-37.4	121-16.2	3.8	1.2	19	65	3.3	0.19	0.7	0.7	B	MT JOHNSON
27	20	12	2.6	36- 6.0	120-41.6	9.5	1.7	21	112	2.6	0.21	0.9	1.1	B	SLACK CANYON
27	21	31	49.1	36-40.7	121-20.6	3.8	1.3	20	55	3.2	0.15	0.5	0.4	B	PAICINES
27	22	6	10.1	38-49.0	122-48.1	2.2	1.3	14	52	3.7	0.10	0.4	0.3	A	THE GEYSERS
27	23	29	41.8	36-30.7	120-50.7	11.9	2.6	42	107	14.7	0.21	0.6	0.6	B	PANOCHE
28	1	7	11.3	38-48.4	122-46.5	2.0	1.0	11	68	1.8	0.09	0.3	0.2	A	THE GEYSERS
28	4	14	39.6	36-32.5	121- 5.5	5.9	1.2	19	69	3.8	0.19	0.6	1.5	B	SAN BENITO
28	4	31	11.0	36-44.7	121-21.0	10.6	1.2	19	47	3.4	0.16	0.7	1.3	B	PAICINES
28	8	43	10.5	36-28.3	121- 1.9	9.1	1.0	14	87	4.9	0.07	0.4	0.8	A	TOPO VALLEY
28	13	45	16.1	36-41.3	121- 5.0	6.7	1.0	19	88	3.1	0.12	0.5	0.8	A	PANOCHE PASS
28	16	41	29.4	36-36.9	121-17.0	10.2	1.9	41	44	2.8	0.14	0.3	0.6	A	MT JOHNSON
28	17	25	17.7	36-34.3	121-12.1	6.8	1.3	22	66	1.2	0.16	0.5	1.0	B	BICKMORE CANYON
28	18	10	22.9	36-30.9	120-45.1	5.4	2.1	35	159	16.6	0.25	0.9	0.9	C	PANOCHE
28	22	27	8.1	37- 1.5	121-27.6	4.5	1.9	56	71	2.2	0.14	0.3	0.3	A	GILROY HOT SPRINGS
28	22	34	36.8	36-32.4	121-10.3	5.6	1.2	13	66	4.2	0.15	0.8	1.5	B	BICKMORE CANYON
MAR 1	2	17	36.1	36-43.3	121-24.2	1.8	1.7	37	54	3.2	0.21	0.4	0.4	B	MT HARLAN
1	2	17	59.9	36-43.2	121-24.1	4.7	2.6	43	46	3.4	0.26	0.6	0.6	B	MT HARLAN
1	5	43	2.0	36-45.5	121-21.6	4.7	1.1	18	68	2.2	0.11	0.4	0.5	A	TRES PINOS
1	6	18	25.4	36-45.5	121-22.1	5.9	2.3	66	25	2.2	0.21	0.4	0.9	B	TRES PINOS
1	9	32	44.6	39-26.7	123-16.9	4.7	2.4	17	259	50.2	0.22	9.6	3.2	D	NE 1/4 WILLITS
1	15	53	46.0	36-45.8	121-21.8	5.7	0.9	14	86	1.8	0.10	0.5	1.0	A	TRES PINOS
1	17	15	14.9	38-50.2	122-24.5	0.3	1.5	10	172	4.8	0.10	0.8	0.8	B	JERICHO VALLEY
1	21	8	45.9	37-50.9	122- 2.4	6.1	3.0	53	42	4.1	0.17	0.4	0.4	B	LAS TRAMPAS RIDGE
1	21	26	30.3	36-38.5	121-17.5	5.6	1.7	21	56	3.3	0.16	0.5	0.6	B	PAICINES
1	21	26	53.3	37-51.0	122- 1.9	5.6	1.1	15	57	4.6	0.10	0.4	0.4	A	LAS TRAMPAS RIDGE
1	23	23	56.2	37-22.0	121-35.4	7.2	1.2	13	120	5.5	0.16	0.9	2.4	B	ISABEL VALLEY
2	0	15	3.7	36-54.0	121-29.0	9.9	0.8	22	58	1.8	0.11	0.5	0.9	A	SAN FELIPE
2	6	29	37.8	39-27.2	122-53.9	3.8	2.2	12	241	36.7	0.13	2.6	0.6	D	LAKE PILLSBURY
2	13	2	51.8	36-53.4	121-29.7	6.3	1.9	23	58	2.4	0.10	0.3	0.6	A	SAN FELIPE
2	22	22	12.2	38-48.8	122-48.2	3.9	1.3	16	74	3.7	0.14	0.5	0.7	A	THE GEYSERS
3	0	50	37.0	35-32.2	120-32.8	11.1	1.7	10	315	31.1	0.13	10.1	2.3	D	CRESTON
3	0	52	2.8	38-48.8	122-48.5	2.1	0.9	12	73	3.2	0.08	0.3	0.2	A	THE GEYSERS
3	0	58	2.3	36-44.6	121-20.9	10.3	1.1	13	82	3.5	0.15	1.0	1.9	B	PAICINES
3	1	53	38.7	38-42.1	122-55.4	5.2	1.3	16	72	7.8	0.22	0.8	4.4	B	GEYSERVILLE
3	8	16	36.1	36- 1.9	120-35.6	4.2	1.7	12	90	4.5	0.09	0.6	0.6	B	SMITH MTN

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
MAR 3	12	3	7.6	38-49.2	122-47.8	1.7	1.2	14	80	4.0	0.09	0.3	0.2	A	THE GEYSERS
3	14	28	5.6	36-45.4	121-21.9	4.5	1.0	14	74	2.4	0.11	0.5	0.5	A	TRES PINOS
3	14	39	7.9	36-44.8	121-21.0	9.1	1.4	19	52	3.2	0.18	0.7	1.3	B	PAICINES
3	16	48	13.2	36-50.1	121-24.0	9.5	1.1	21	56	2.5	0.09	0.3	0.7	A	HOLLISTER
3	17	57	44.1	36-14.1	120-48.7	6.3	1.6	12	136	2.7	0.18	1.1	1.6	C	MONARCH PEAK
3	19	40	23.4	36-48.6	121-32.4	5.2	1.0	19	73	3.3	0.25	0.9	1.7	B	SAN JUAN BAUTISTA
3	21	42	23.7	37-26.3	121-47.2	5.1	1.4	23	76	1.7	0.11	0.4	0.3	A	CALAVERAS RESERVOIR
3	22	52	10.8	36-42.9	121-23.6	4.5	1.6	23	51	3.7	0.19	0.6	0.8	B	MT HARLAN
3	23	22	56.2	36-27.8	121- 5.1	10.5	1.4	17	75	5.3	0.20	1.0	1.9	B	TOPO VALLEY
3	23	25	36.2	37-38.1	122-29.3	9.0	1.8	26	109	1.3	0.12	0.4	0.7	B	SAN FRANCISCO SOUTH
4	0	58	36.8	36-32.8	121-11.0	8.4	1.6	19	67	3.2	0.13	0.4	0.9	A	BICKMORE CANYON
4	1	33	49.1	36-33.0	121-10.8	8.4	1.2	16	66	2.9	0.11	0.4	0.8	A	BICKMORE CANYON
4	2	29	14.5	36-27.2	121- 4.6	7.9	2.1	39	63	6.2	0.20	0.5	1.1	B	TOPO VALLEY
4	2	46	21.7	36-27.2	121- 4.6	8.1	1.9	28	63	6.2	0.18	0.6	1.3	B	TOPO VALLEY
4	3	5	14.5	36-27.3	121- 4.8	9.2	1.5	19	82	6.2	0.21	0.9	1.8	B	TOPO VALLEY
4	4	16	41.6	36-26.7	121- 5.1	9.1	1.3	15	132	6.3	0.19	1.1	1.8	B	TOPO VALLEY
4	6	57	5.7	38-48.6	122-49.4	0.8	1.9	19	56	2.3	0.09	0.2	0.2	A	THE GEYSERS
4	7	18	39.1	38-48.6	122-49.3	1.3	1.0	10	91	2.4	0.09	0.4	0.5	B	THE GEYSERS
4	8	13	11.0	37- 8.3	121-31.3	9.3	1.1	29	102	8.1	0.11	0.3	0.9	B	MT SIZER
4	11	5	52.2	36-27.2	121- 4.6	7.6	1.5	20	74	6.0	0.18	0.6	1.3	B	TOPO VALLEY
4	12	58	34.1	36- 2.5	120-37.8	0.0	1.5	8	114	4.4	0.09	0.3	0.5	B	SLACK CANYON
4	13	36	20.5	38-41.7	122-55.0	4.9	1.4	19	71	8.4	0.16	0.6	3.3	B	GEYSERVILLE
4	17	6	54.0	38-41.7	122-55.3	4.0	1.2	14	73	8.3	0.21	0.9	1.4	B	GEYSERVILLE
4	18	57	51.8	35-54.9	120-28.6	3.5	1.0	8	78	3.4	0.05	0.4	0.2	A	PARKFIELD
4	19	29	51.6	38-41.6	122-55.2	4.4	1.2	15	73	8.2	0.17	0.7	4.2	B	GEYSERVILLE
4	21	4	38.5	36-27.3	121- 4.5	7.8	1.4	21	72	5.3	0.19	0.8	1.6	B	TOPO VALLEY
4	21	38	51.4	36-32.6	121-10.9	8.3	1.4	25	48	3.6	0.16	0.5	1.0	B	BICKMORE CANYON
5	3	58	38.4	36-35.8	121-14.2	4.3	0.9	12	64	4.0	0.14	0.5	1.5	A	BICKMORE CANYON
5	5	30	1.2	36-57.4	121-36.8	3.4	1.0	18	57	2.7	0.13	0.4	0.3	A	CHITTENDEN
5	6	39	19.7	36-37.8	121-10.1	11.0	0.8	21	69	3.9	0.12	0.5	0.9	A	CHERRY PEAK
5	8	1	32.9	36-27.3	121- 4.6	7.1	1.7	28	75	6.1	0.19	0.6	1.4	B	TOPO VALLEY
5	11	7	2.7	37-38.7	121-39.5	11.8	1.6	17	197	5.9	0.10	0.8	0.5	C	ALTAMONT
5	11	43	12.2	38-46.2	122-26.1	4.6	2.2	17	132	4.2	0.16	0.7	2.2	B	JERICHO VALLEY
5	12	4	34.9	38-48.2	122-46.4	2.0	1.4	13	74	1.6	0.09	0.3	0.2	A	THE GEYSERS
5	13	15	29.1	38-48.4	122-49.2	1.3	0.9	12	55	2.4	0.06	0.2	0.2	A	THE GEYSERS
5	20	40	15.0	35-46.9	120-21.4	5.5	1.8	10	279	5.5	0.09	2.2	1.8	C	CHOLAME VALLEY
5	20	53	56.6	35-47.2	120-21.3	5.1	1.3	8	277	4.9	0.08	1.7	0.5	C	CHOLAME VALLEY
6	0	32	33.7	36-41.9	121- 8.0	8.0	3.0	63	62	5.1	0.14	0.3	0.5	A	CHERRY PEAK
6	0	35	42.7	36-41.8	121- 7.7	7.7	2.2	45	55	4.9	0.13	0.3	0.7	A	CHERRY PEAK
6	0	45	3.0	36-42.0	121- 7.5	6.7	1.7	23	94	5.1	0.11	0.4	0.9	B	PANOCHE PASS
6	1	21	32.9	36-42.2	121- 7.5	6.7	1.6	23	127	5.4	0.10	0.4	0.8	B	CHERRY PEAK
6	1	29	28.0	36-36.6	121-15.2	5.1	1.9	33	29	3.1	0.14	0.3	0.5	A	MT JOHNSON
6	1	48	11.4	36-42.3	121- 7.4	6.4	1.1	17	128	5.5	0.09	0.4	0.8	B	PANOCHE PASS
6	6	2	31.9	37-42.7	122- 0.9	4.4	1.5	24	51	5.2	0.12	0.3	0.3	B	HAYWARD
6	7	55	58.4	36-42.1	121- 7.4	7.8	1.3	21	127	5.1	0.10	0.4	0.7	B	PANOCHE PASS

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
MAR	6	9	42	38.8	38-48.1	122-46.4	2.0	1.0	12	67	1.7	0.10	0.4	0.2	A	THE GEYSERS
	6	9	59	14.3	37-22.4	121-42.9	8.6	2.0	50	84	4.0	0.12	0.3	0.8	A	LICK OBSERVATORY
	6	10	31	1.1	38-48.7	122-48.5	2.5	1.6	26	42	3.3	0.09	0.2	0.2	A	THE GEYSERS
	6	15	38	37.2	36-42.3	121- 7.3	6.5	1.5	22	127	4.9	0.09	0.4	0.7	B	PANOCHE PASS
	6	16	3	2.5	38-48.5	122-48.3	2.3	0.9	12	80	3.6	0.08	0.3	0.2	A	THE GEYSERS
	6	19	9	51.3	37-22.4	121-42.5	9.0	1.5	30	85	4.5	0.13	0.4	1.0	A	LICK OBSERVATORY
	6	20	40	34.9	38-28.7	122-41.2	10.6	1.2	7	77	8.4	0.04	0.4	0.9	A	SANTA ROSA
	6	23	33	35.6	38-47.8	122-58.7	5.8	1.6	16	63	4.5	0.14	0.5	1.4	A	ASTI
	7	8	16	29.3	36-58.2	121-38.5	4.1	2.1	56	40	4.6	0.16	0.3	0.2	B	WATSONVILLE EAST
	7	12	14	54.6	36-27.4	121- 4.2	9.4	1.2	23	79	5.8	0.21	0.8	1.5	B	TOPO VALLEY
	7	13	32	6.6	36-55.3	121-28.4	7.9	1.1	28	56	3.0	0.10	0.3	0.6	A	SAN FELIPE
	7	14	35	32.6	36-42.1	121- 7.4	6.6	1.2	20	127	5.2	0.09	0.4	0.8	B	PANOCHE PASS
	7	14	48	28.4	37-15.5	121-39.4	7.3	1.3	15	86	1.4	0.12	0.6	1.1	A	LICK OBSERVATORY
	7	18	38	3.2	36-33.2	121- 5.6	11.5	1.5	20	85	5.1	0.18	0.8	1.3	B	SAN BENITO
	7	23	1	16.0	36-34.6	121-12.7	6.0	1.1	16	67	2.0	0.13	0.5	1.0	A	BICKMORE CANYON
	8	4	8	25.0	36-44.5	121-20.9	8.7	1.4	27	34	3.7	0.20	0.6	1.1	B	PAICINES
	8	9	6	52.2	36-42.1	121- 7.8	6.8	1.4	33	86	5.3	0.13	0.4	0.9	A	CHERRY PEAK
	8	10	45	18.7	36-47.1	121- 9.9	5.6	1.2	18	114	6.8	0.11	0.4	0.7	B	QUIEN SABE VALLEY
	8	21	28	1.4	38-48.8	122-48.5	2.0	1.2	14	55	3.2	0.08	0.3	0.2	A	THE GEYSERS
	8	22	52	2.9	38-48.6	122-48.5	2.2	0.8	8	80	3.5	0.04	0.2	0.2	A	THE GEYSERS
	9	14	0	57.1	38-47.4	122-58.4	5.3	1.4	17	58	4.3	0.13	0.5	1.6	A	ASTI
	9	15	42	5.3	35-43.9	121-17.9	10.3	2.1	18	230	14.3	0.08	0.7	0.4	C	PIEDRAS BLANCAS
	9	18	7	8.6	36-43.4	121-25.3	4.6	1.7	30	63	2.9	0.17	0.5	0.7	B	MT HARLAN
	9	19	10	4.7	36-13.9	121-45.3	11.9	1.9	15	158	1.5	0.14	1.2	0.6	C	PFEIFFER POINT
	9	21	43	1.2	38-48.4	122-47.7	1.5	0.9	8	77	3.4	0.12	0.5	0.6	A	THE GEYSERS
	10	3	15	8.8	36-51.2	121-21.2	7.1	1.7	35	50	4.7	0.10	0.3	0.7	A	TRES PINOS
	10	7	34	38.1	37-15.1	121-40.0	5.9	1.2	18	84	0.9	0.08	0.3	0.3	A	LICK OBSERVATORY
	10	13	13	30.9	38-48.3	122-49.3	1.1	2.0	27	49	2.9	0.10	0.2	0.2	A	THE GEYSERS
	10	17	21	22.3	36-35.5	121- 6.5	12.5	1.0	13	86	7.4	0.09	0.6	1.2	A	SAN BENITO
	10	17	45	32.5	38-48.9	122-49.2	1.3	1.4	17	52	3.3	0.08	0.3	0.2	A	THE GEYSERS
	10	18	36	25.0	38-48.1	122-49.2	1.4	1.2	14	63	3.2	0.08	0.3	0.2	A	THE GEYSERS
	10	21	57	15.1	36-35.1	121-13.7	6.7	1.7	26	57	3.7	0.14	0.4	0.8	A	BICKMORE CANYON
	11	8	15	28.4	39- 0.1	123-21.1	3.0	1.3	10	199	15.4	0.17	1.4		D	SE 1/4 BOONVILLE
	11	11	2	52.8	36-34.3	120-41.8	8.4	1.7	17	213	13.6	0.19	1.5	2.2	C	TUREY HILLS
	12	5	41	5.3	39- 4.6	122-52.8	1.3	1.4	12	148	7.5	0.11	1.0	[illegible]	[illegible]	[illegible]SPORT
	12	5	55	30.6	36-34.3	120-42.0	10.2	3.3	54	157	13.[illegible]	[illegible]	0.5	0.4	C	TUREY HILLS
	12	6	3	26.5	36-34.4	120-41.9	5.1	2.0	25	176	[illegible]	0.20	0.9	0.7	C	TUREY HILLS
	12	9	19	6.5	36-54.3	121-29.3	9.7	3.4	74	[illegible]	2.2	0.17	0.3	0.4	B	SAN FELIPE
	12	9	26	58.4	36-53.9	121-28.9	8.2	1.3	[illegible]	48	1.6	0.16	0.4	0.8	B	SAN FELIPE
	12	19	22	56.3	36-57.6	121-37.3	4.3	1.[illegible]	[illegible]	46	3.4	0.15	0.4	0.3	A	CHITTENDEN
	13	0	8	28.2	36-26.3	121- 2.5	[illegible]	2.[illegible]	51	67	2.6	0.21	0.5	0.7	B	TOPO VALLEY
	13	8	44	57.4	39-14.5	122-41.4	[illegible]	1.7	11	216	17.1	0.12	1.5		D	NW 1/4 CLEARLAKE OAKS
	13	18	24	2.3	38-48.2	122-47.[illegible]	1.0	0.9	10	80	3.0	0.08	0.3	0.3	A	THE GEYSERS
	13	18	59	28.4	38-48.2	122-[illegible]	3.7	1.1	16	67	3.5	0.14	0.5	0.4	A	THE GEYSERS
	13	19	38	[illegible]4.4	36-32.7	[illegible]-30.4	6.3	1.4	22	64	3.6	0.13	0.4	0.9	A	BICKMORE CANYON

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
MAR	13	19	38	41.7	36-32.8	121-10.7	8.0	0.7	11	66	3.4	0.13	0.7	1.5	A	BICKMORE CANYON
	13	23	38	52.6	38-48.1	122-48.4	3.6	0.9	10	65	4.1	0.17	0.9	0.9	B	THE GEYSERS
	14	1	11	20.6	36-58.8	121-39.6	3.8	1.0	13	65	4.2	0.09	0.4	0.4	A	WATSONVILLE EAST
	14	4	43	52.3	36-54.3	121-29.1	3.9	1.2	28	58	2.4	0.10	0.2	0.2	A	SAN FELIPE
	14	7	52	24.1	36-59.3	121-40.5	7.0	1.1	18	51	3.8	0.10	0.4	0.8	A	WATSONVILLE EAST
	14	8	37	3.9	36-41.4	121-22.5	5.1	1.4	25	42	3.4	0.12	0.4	0.6	A	MT HARLAN
	14	9	0	42.6	36-27.3	121- 5.0	7.5	1.4	22	82	6.2	0.19	0.8	1.6	B	TOPO VALLEY
	14	11	6	26.5	38-48.4	122-48.0	2.9	0.9	7	78	3.9	0.06	0.4	0.3	A	THE GEYSERS
	14	11	9	54.9	37-15.4	121-58.3	7.0	2.0	30	49	6.1	0.08	0.2	0.8	A	SAN JOSE WEST
	14	12	8	29.1	36-44.5	121-20.9	10.1	0.7	14	80	3.7	0.14	0.8	1.4	A	PAICINES
	14	12	20	57.6	38-48.8	122-48.6	3.7	0.5	8	85	3.1	0.13	0.9	0.8	A	THE GEYSERS
	14	14	22	46.4	38-48.7	122-49.3	1.3	0.4	9	89	2.4	0.08	0.4	0.3	A	THE GEYSERS
	14	23	56	8.4	37- 7.6	121-55.6	10.5	1.3	21	53	4.8	0.16	0.6	1.1	B	LOS GATOS
	15	0	44	56.7	37- 2.9	121-28.0	7.9	1.9	46	67	2.9	0.15	0.4	0.7	B	GILROY HOT SPRINGS
	15	7	50	15.0	36-37.3	121-15.3	4.4	1.9	31	46	3.1	0.14	0.4	0.4	A	MT JOHNSON
	15	12	36	39.3	36-42.1	121- 7.6	5.6	1.3	24	87	5.3	0.12	0.4	0.6	A	CHERRY PEAK
	15	13	20	57.2	36-32.7	121-10.8	7.1	1.9	30	43	3.4	0.15	0.4	0.9	A	BICKMORE CANYON
	15	13	34	16.5	36-32.6	121-10.8	7.0	2.2	38	43	3.6	0.18	0.4	0.8	B	BICKMORE CANYON
	15	18	5	17.0	36-25.4	121- 1.8	0.1	2.1	18	45	1.1	0.19	0.7	0.9	B	TOPO VALLEY
	15	18	43	42.2	36-25.4	121- 1.6	3.4	2.1	16	77	0.8	0.27	1.2	1.2	B	TOPO VALLEY
	15	18	46	2.2	36-53.6	121-33.8	5.6	1.4	22	69	2.6	0.13	0.5	0.9	A	CHITTENDEN
	15	20	40	34.0	39-26.8	123-17.2	0.3	2.5	11	316	50.7	0.20	14.7	26.3	D	NE 1/4 WILLITS
	15	21	24	0.7	38- 7.6	121-55.2	21.7	2.2	19	84	10.9	0.23	1.1	1.1	B	DENVERTON
	15	21	40	31.5	36-38.3	121-17.8	4.5	1.5	20	35	3.5	0.14	0.5	0.5	A	PAICINES
	15	22	10	19.5	36-38.9	121-18.0	3.8	1.6	20	37	3.1	0.18	0.6	0.5	B	PAICINES
	16	0	37	25.3	38-48.2	122-46.2	2.1	1.7	20	52	1.3	0.11	0.3	0.2	A	THE GEYSERS
	16	0	57	52.7	38-48.1	122-46.4	2.3	1.0	11	64	1.7	0.09	0.3	0.2	A	THE GEYSERS
	16	0	58	34.4	38-48.2	122-46.1	1.9	1.5	20	52	1.2	0.11	0.3	0.2	A	THE GEYSERS
	16	1	11	59.7	38-48.2	122-46.4	2.1	1.5	16	65	1.6	0.10	0.3	0.2	A	THE GEYSERS
	16	3	46	49.8	36-50.1	121-17.2	4.9	2.3	28	56	2.3	0.09	0.3	0.4	A	TRES PINOS
	16	7	1	35.7	36-55.3	121-26.0	5.5	1.6	30	66	3.7	0.11	0.3	0.7	A	SAN FELIPE
	16	7	53	41.9	36-55.4	121-28.2	4.9	0.8	19	64	3.4	0.07	0.3	0.3	A	SAN FELIPE
	16	7	54	56.1	36-55.6	121-26.3	6.6	3.2	51	38	3.3	0.13	0.3	0.6	A	SAN FELIPE
	16	7	56	30.5	36-55.4	121-28.7	5.6	2.7	25	43	4.0	0.13	0.4	1.3	A	SAN FELIPE
	16	12	38	59.3	36-55.6	121-28.0	5.2	1.9	36	64	3.9	0.11	0.3	0.5	A	SAN FELIPE
	16	13	31	28.3	36-15.7	120-22.9	10.6	2.0	17	75	3.9	0.20	1.1	1.1	B	JOAQUIN ROCKS
	16	14	54	0.7	38-48.3	122-48.5	2.2	0.6	8	93	4.1	0.03	0.2	0.1	B	THE GEYSERS
	16	15	0	1.7	36-56.3	121-28.1	7.4	2.6	50	41	3.9	0.14	0.3	0.7	A	SAN FELIPE
	16	16	56	41.4	36-55.4	121-28.2	5.1	0.6	21	64	3.5	0.12	0.4	0.9	A	SAN FELIPE
	16	18	15	53.0	36-55.3	121-28.2	5.2	1.2	28	58	3.5	0.11	0.3	0.7	A	SAN FELIPE
	16	19	47	47.3	36-44.3	121-20.8	8.6	1.4	24	49	3.3	0.19	0.6	1.2	B	PAICINES
	16	20	50	38.8	36-43.9	121-20.5	7.9	0.9	12	87	2.5	0.16	0.9	2.2	B	PAICINES
	16	21	2	40.9	38-48.7	122-50.0	1.1	0.9	8	102	1.6	0.10	0.4	0.5	B	THE GEYSERS
	16	21	35	34.8	36-43.9	121-20.3	9.4	0.8	10	75	2.5	0.17	1.3	2.6	B	PAICINES
	16	22	58	49.4	37- 2.6	121-27.7	7.3	1.0	17	74	2.6	0.16	0.7	1.5	B	GILROY HOT SPRINGS

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
MAR 16	23	43	30.2	36-44.3	121-20.8	8.6	2.7	40	27	3.4	0.20	0.5	0.9	B	PAICINES
16	23	51	49.5	36-44.3	121-20.3	8.5	1.6	22	44	3.3	0.19	0.6	1.2	B	PAICINES
16	23	53	0.2	36-44.1	121-20.5	8.5	1.3	17	60	2.9	0.20	0.8	1.5	B	PAICINES
16	23	56	54.6	36-44.4	121-20.5	9.5	1.2	16	60	3.5	0.21	0.9	1.8	B	PAICINES
17	0	3	7.0	36-44.4	121-21.1	9.0	1.0	11	82	3.4	0.15	1.0	1.8	A	PAICINES
17	0	28	49.4	36-44.5	121-20.7	8.6	1.8	24	45	3.5	0.20	0.6	1.2	B	PAICINES
17	0	32	40.4	36-44.5	121-21.0	10.4	1.5	18	67	3.6	0.14	0.6	0.9	A	PAICINES
17	0	49	16.4	36-44.5	121-20.9	10.1	1.5	21	56	3.6	0.17	0.6	1.0	B	PAICINES
17	0	51	35.9	36-44.5	121-20.9	10.0	1.6	21	47	3.7	0.15	0.5	0.9	A	PAICINES
17	1	50	58.9	36-44.2	121-21.0	9.8	2.2	34	27	3.1	0.19	0.5	0.8	B	PAICINES
17	2	34	40.8	36-14.3	120-50.6	8.1	1.2	10	149	4.7	0.14	1.2	1.7	C	MONARCH PEAK
17	3	37	40.6	36-54.8	121-28.6	7.0	2.1	45	50	2.8	0.12	0.3	0.6	A	SAN FELIPE
17	3	51	40.1	36-44.3	121-20.4	10.4	1.5	20	52	3.3	0.15	0.6	1.0	B	PAICINES
17	3	55	13.7	36-44.6	121-21.2	9.2	2.6	35	34	3.5	0.20	0.5	1.0	B	PAICINES
17	4	43	59.6	36-44.7	121-21.4	11.2	1.2	10	94	3.5	0.13	1.3	2.6	B	PAICINES
17	4	46	37.4	36-32.7	121-11.2	8.1	0.6	13	68	3.3	0.13	0.8	1.3	A	BICKMORE CANYON
17	5	26	53.0	36-44.7	121-21.2	9.2	1.9	24	40	3.5	0.15	0.5	0.8	B	PAICINES
17	5	27	36.1	36-44.7	121-20.9	9.9	1.6	22	46	3.5	0.20	0.7	1.3	B	PAICINES
17	5	36	34.9	38-48.7	122-48.3	2.6	0.5	9	81	3.6	0.04	0.3	0.2	A	THE GEYSERS
17	6	0	8.6	36-44.6	121-20.6	10.7	1.0	14	73	3.6	0.13	0.8	1.4	A	PAICINES
17	7	51	55.7	36-27.3	121- 3.7	3.5	1.2	14	85	5.1	0.15	0.7	0.7	B	TOPO VALLEY
17	11	42	36.7	36-50.1	121-15.9	4.8	0.9	16	128	3.6	0.12	0.5	0.5	B	TRES PINOS
17	12	58	43.4	36-26.5	121- 4.0	8.4	1.8	22	68	4.7	0.20	0.8	1.5	B	TOPO VALLEY
17	13	22	56.6	36-29.9	121- 7.0	5.2	1.1	15	62	3.9	0.17	0.7	1.6	B	TOPO VALLEY
17	13	29	35.4	36-44.5	121-20.8	9.0	1.9	33	27	3.6	0.18	0.4	0.9	B	PAICINES
17	17	28	58.6	38-55.3	122-38.8	2.2	1.1	10	100	3.2	0.17	1.0	0.7	B	CLEARLAKE HIGHLANDS
17	21	25	36.3	36-44.6	121-20.8	9.4	1.5	26	46	3.6	0.19	0.6	1.1	B	PAICINES
18	2	30	47.9	36-41.4	121-19.7	8.5	1.9	38	34	2.5	0.13	0.3	0.6	A	PAICINES
18	3	26	7.7	36-36.5	121-14.5	3.2	1.8	27	34	2.8	0.20	0.5	0.4	B	BICKMORE CANYON
18	6	14	6.7	36-44.5	121-20.9	10.7	1.2	15	85	3.2	0.12	0.7	1.2	A	PAICINES
18	6	28	43.7	36-23.3	121- 1.0	8.7	1.5	21	100	4.6	0.16	0.6	1.3	B	TOPO VALLEY
18	7	4	28.4	36-44.7	121-21.2	11.3	2.4	63	25	3.4	0.19	0.4	0.5	B	PAICINES
18	7	5	29.0	36-44.5	121-21.3	11.0	1.0	15	55	3.2	0.14	0.8	1.5	A	PAICINES
18	8	13	9.7	36-44.8	121-21.2	10.8	1.3	23	55	3.2	0.19	0.7	1.3	B	PAICINES
18	12	54	44.4	36-30.3	121- 8.2	9.7	1.1	19	90	3.4	0.27	1.1	2.4	B	NORTH CHALONE PEAK
18	15	18	29.0	38-29.9	122-33.3	5.8	1.6	20	87	5.1	0.19	0.9	1.9	B	KENWOOD
18	17	14	28.1	38-48.9	122-47.8	3.4	1.4	20	49	3.8	0.14	0.4	0.5	A	THE GEYSERS
19	0	5	31.6	36-36.9	121- 9.4	12.0	0.8	19	58	5.3	0.12	0.6	1.0	A	BICKMORE CANYON
19	2	49	47.2	38-29.5	122-34.1	6.5	1.1	10	162	4.7	0.14	1.4	1.5	C	KENWOOD
19	10	46	51.3	36-32.7	121-11.3	7.6	1.3	20	69	3.3	0.14	0.5	1.1	A	BICKMORE CANYON
19	10	49	24.5	36-37.4	121-16.9	6.0	1.4	23	50	3.2	0.16	0.5	0.9	B	MT JOHNSON
19	12	37	0.2	39-20.2	122-47.1	4.0	1.8	15	222	23.4	0.12	1.5	0.9	C	POTATO HILL
19	14	16	3.1	38-30.8	122-44.7	4.9	1.9	18	57	4.6	0.14	0.5	1.1	A	MARK WEST SPRINGS
19	14	23	18.3	36-44.5	121-20.9	9.6	1.6	15	63	3.6	0.16	0.8	1.3	B	PAICINES
19	15	52	11.0	36-53.3	121-29.5	12.2	1.3	30	38	2.0	0.12	0.4	0.8	A	SAN FELIPE

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
MAR 19	22	56	47.2	37-25.6	121-37.3	5.7	3.5R	89	134	9.6	0.18	0.4	0.4	B	EYLAR MTN
20	4	24	2.3	36-36.5	121-14.6	3.4	1.7	22	61	2.9	0.19	0.6	0.5	B	BICKMORE CANYON
20	4	57	8.2	37- 3.3	121-50.0	3.6	1.7	17	60	2.2	0.12	0.4	0.2	A	LOMA PRIETA
20	5	2	28.9	37-26.1	121-36.8	5.9	1.6	18	165	10.6	0.17	0.9	0.8	C	EYLAR MTN
20	6	35	40.3	36-23.8	121- 1.4	9.2	1.6	25	102	3.1	0.23	0.9	1.6	B	TOPO VALLEY
20	7	15	36.3	36-44.8	121-20.6	12.2	1.5	15	77	3.2	0.12	0.8	1.3	A	PAICINES
20	13	10	29.4	37-11.8	121-41.5	6.8	1.3	14	83	7.0	0.06	0.3	0.7	B	MORGAN HILL
20	23	1	32.9	36-53.9	121-28.8	7.6	1.2	27	49	1.5	0.12	0.4	0.7	A	SAN FELIPE
20	23	31	14.3	38-48.9	122-47.4	3.7	1.2	16	48	3.2	0.11	0.4	0.4	A	THE GEYSERS
21	2	22	7.6	38-48.1	122-46.2	2.0	1.1	15	65	1.4	0.11	0.4	0.2	A	THE GEYSERS
21	7	46	46.9	38-48.5	122-47.7	3.6	1.6	23	43	3.5	0.17	0.5	0.4	B	THE GEYSERS
21	9	48	27.2	38-49.1	122-47.8	2.3	1.4	21	41	3.3	0.09	0.3	0.2	A	THE GEYSERS
21	9	48	47.9	38-48.9	122-48.1	3.0	1.1	14	74	3.8	0.13	0.5	0.4	A	THE GEYSERS
21	11	33	59.2	38-48.5	122-47.8	1.3	0.8	11	70	3.6	0.09	0.3	0.3	A	THE GEYSERS
21	11	52	33.7	36- 0.1	120-35.2	1.5	1.5	12	115	7.6	0.12	0.4	0.4	B	SMITH MTN
21	18	51	12.0	36-34.1	121- 9.6	11.3	1.5	29	53	2.7	0.13	0.4	0.5	A	BICKMORE CANYON
21	22	39	28.5	38-48.3	122-46.9	3.8	1.5	15	71	2.3	0.09	0.4	0.3	A	THE GEYSERS
22	1	41	32.4	36-23.8	121- 0.9	5.6	1.3	14	101	3.1	0.12	0.5	1.0	B	TOPO VALLEY
22	6	30	5.1	38-49.0	122-48.2	1.8	0.4	9	89	3.6	0.12	0.5	0.4	A	THE GEYSERS
22	22	46	41.2	36-32.4	121- 5.2	7.6	2.2	30	53	3.5	0.19	0.5	1.2	B	SAN BENITO
23	0	33	55.4	38-49.1	122-47.9	2.1	1.0	11	79	3.9	0.08	0.3	0.3	A	THE GEYSERS
23	1	6	50.2	38-47.7	122-48.8	2.5	1.8	20	52	4.1	0.10	0.3	0.2	A	THE GEYSERS
23	6	38	43.2	36-54.1	121-29.1	6.1	1.1	21	51	2.1	0.10	0.3	0.6	A	SAN FELIPE
23	7	5	42.8	38-31.4	122-34.4	4.4	1.6	19	131	3.0	0.17	0.8	1.5	B	CALISTOGA
23	7	12	20.3	36-27.3	121- 4.6	7.4	2.0	31	64	6.1	0.20	0.6	1.3	B	TOPO VALLEY
23	8	30	45.5	36-54.3	121-29.0	8.3	1.8	41	43	1.8	0.11	0.3	0.5	A	SAN FELIPE
23	10	47	51.1	36-27.4	121- 5.0	8.6	1.4	17	81	5.9	0.22	1.1	2.0	B	TOPO VALLEY
23	12	27	51.0	36-27.4	121- 4.7	7.5	1.2	18	81	6.0	0.18	0.8	1.6	B	TOPO VALLEY
23	12	34	26.8	36-27.4	121- 4.6	6.0	1.8	24	75	6.0	0.19	0.6	1.6	B	TOPO VALLEY
23	12	57	4.7	36-27.3	121- 4.8	6.5	1.5	18	74	6.1	0.17	0.7	1.6	B	TOPO VALLEY
23	17	5	57.9	36-47.5	121-17.4	7.3	1.5	38	65	2.8	0.14	0.4	0.8	A	TRES PINOS
23	20	2	43.4	36-36.1	121- 8.0	8.5	1.7	25	61	5.7	0.21	0.7	1.5	B	BICKMORE CANYON
23	20	39	39.4	39-22.2	122-48.9	3.7	1.9	11	295	26.8	0.11	1.4	0.6	C	POTATO HILL
23	21	10	23.3	38-49.0	122-48.1	2.1	1.8	24	51	3.6	0.10	0.3	0.2	A	THE GEYSERS
23	21	11	13.5	38-48.7	122-48.0	2.3	1.0	8	83	3.9	0.07	0.4	0.3	A	THE GEYSERS
24	6	3	3.2	36-17.2	120-53.9	5.8	1.9	24	104	4.2	0.24	0.8	1.8	B	LONOAK
24	10	22	44.5	35-59.4	120-34.0	3.3	1.5	10	85	9.2	0.12	0.8	0.9	B	STOCKDALE MTN
24	10	39	38.8	38-22.8	122-12.7	1.4	1.6	18	122	11.0	0.03	0.4	0.5	B	CAPELL VALLEY
24	17	25	59.8	37-15.0	121-58.3	7.0	1.4	20	51	5.6	0.07	0.3	0.7	A	SAN JOSE WEST
24	22	36	17.7	36-44.7	120-57.6	4.9	1.6	23	114	12.6	0.16	0.6	0.5	C	CERRO COLORADO
24	23	43	36.6	36-55.5	121-28.2	5.2	1.3	23	59	3.5	0.14	0.5	1.0	A	SAN FELIPE
25	3	23	47.8	38-48.1	122-48.7	4.0	1.4	18	54	3.8	0.15	0.5	0.7	A	THE GEYSERS
25	11	19	9.6	36-32.7	121- 5.1	7.7	1.3	17	88	4.0	0.17	0.7	1.6	B	SAN BENITO
25	13	19	7.6	36-17.3	120-54.5	5.0	1.8	21	114	3.5	0.21	0.8	1.3	B	LONOAK
25	14	35	38.2	38-48.5	122-47.6	1.1	1.3	12	69	3.4	0.11	0.4	0.4	A	THE GEYSERS

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
MAR 25	15	35	17.3	39-14.7	123-12.2	1.0	1.8	12	293	27.7	0.19	5.9		D	UKIAH
25	17	36	24.5	36-46.9	121-19.7	6.5	1.4	23	72	2.0	0.13	0.5	0.9	A	TRES PINOS
25	17	54	42.8	37- 3.9	121-29.8	4.9	1.3	30	99	4.6	0.18	0.6	1.7	B	GILROY HOT SPRINGS
26	2	58	59.8	36-44.4	121-20.8	8.7	1.3	29	44	3.4	0.19	0.5	0.9	B	PAICINES
26	4	37	54.5	36-30.0	121- 6.2	3.1	1.2	9	98	2.7	0.10	0.6	0.8	B	TOPO VALLEY
26	14	31	29.8	36-53.9	121-28.8	7.5	1.2	35	42	1.6	0.12	0.3	0.6	A	SAN FELIPE
26	19	13	6.7	38-26.3	122-12.9	7.3	2.7	55	98	14.1	0.22	0.5	0.8	B	CAPELL VALLEY
26	23	30	4.1	36-34.3	121-13.5	7.6	2.3	46	34	3.2	0.17	0.4	0.8	B	BICKMORE CANYON
27	2	33	17.2	36-30.3	121- 6.2	3.7	1.5	21	70	2.5	0.17	0.6	0.5	B	SAN BENITO
27	10	39	36.8	36-39.6	121-19.0	3.8	1.8	27	55	4.0	0.16	0.4	0.4	B	PAICINES
27	11	24	58.1	38-20.6	122-37.6	5.6	2.5	43	61	6.7	0.17	0.4	0.7	B	COTATI
27	11	32	28.1	34-14.0	120-51.1	10.0	2.7	29	77	5.5	0.23	0.7	1.1	B	MONARCH PEAK
27	16	20	34.9	37-36.6	122- 0.3	2.4	1.7	28	36	4.9	0.15	0.4	0.4	B	NEWARK
27	19	1	54.1	39- 0.3	123-21.2	5.1	2.0	14	201	15.7	0.26	0.9	12.6	D	SE 1/4 BOONVILLE
27	22	30	47.4	36-39.6	121-19.2	4.1	1.6	28	55	4.1	0.17	0.4	0.7	B	PAICINES
27	23	1	36.5	36-39.7	121-19.1	4.4	1.6	29	57	4.2	0.16	0.4	0.7	B	PAICINES
27	23	40	0.8	36-32.5	120-41.2	6.9	2.2	38	156	16.4	0.22	0.8	2.8	C	TUMEY HILLS
27	23	51	41.3	36-39.7	121-19.1	3.7	1.6	17	58	4.1	0.18	0.6	0.5	B	PAICINES
28	2	9	49.7	36-35.5	121-13.7	4.4	1.6	16	64	4.0	0.15	0.6	1.2	A	BICKMORE CANYON
28	5	27	20.1	36-32.5	121- 5.0	6.9	1.4	18	88	3.6	0.17	0.7	1.5	B	SAN BENITO
28	11	0	30.5	36-44.6	121-20.8	10.1	1.6	27	49	3.6	0.16	0.5	0.8	B	PAICINES
28	14	21	6.6	38-50.0	122-48.3	0.1	2.0	12	89	3.4	0.25	1.0	1.1	B	THE GEYSERS
28	15	6	34.7	38-48.1	122-48.2	1.3	1.1	9	71	4.1	0.04	0.2	0.2	A	THE GEYSERS
28	15	12	57.7	38-48.1	122-47.8	0.9	0.9	6	77	3.9	0.05	0.3	0.5	A	THE GEYSERS
28	15	28	30.3	37- 2.3	121-49.4	1.9	1.6	14	101	1.3	0.21	0.9	0.5	B	LOMA PRIETA
28	17	58	13.1	38-48.3	122-46.7	1.9	1.3	10	83	2.0	0.11	0.4	0.4	A	THE GEYSERS
28	20	0	51.7	38-48.7	122-46.1	1.9	0.9	9	71	1.3	0.21	0.9	0.8	B	THE GEYSERS
28	20	1	57.2	38-47.5	122-45.7	2.4	0.9	7	105	1.6	0.05	0.3	0.3	B	THE GEYSERS
28	20	24	5.7	38-47.9	122-46.3	2.5	1.2	9	93	1.7	0.08	0.4	0.3	B	THE GEYSERS
28	22	43	18.3	38-49.2	122-48.7	1.2	1.5	15	48	2.7	0.07	0.2	0.2	A	THE GEYSERS
29	0	6	48.8	36-31.3	120-26.5	3.0	3.0	29	112	31.5	0.29	1.2	12.3	C	LEVIS
29	1	50	26.6	36-24.8	121- 0.3	12.1	1.1	12	111	1.7	0.10	0.7	1.1	B	TOPO VALLEY
29	3	18	31.4	38-33.3	122-46.9	4.5	1.6	24	62	5.3	0.15	0.5	2.5	B	HEALDSBURG
29	3	20	52.2	36-57.8	121-37.9	4.0	1.7	30	52	4.3	0.15	0.4	0.3	A	WATSONVILLE EAST
29	3	39	33.5	38-33.6	122-47.0	4.7	1.0	14	68	5.3	0.19	0.9	3.6	B	HEALDSBURG
29	5	16	6.9	36-21.4	120-58.9	0.5	1.3	13	108	6.6	0.18	0.8	0.8	B	LONOAK
29	5	51	56.4	36-49.5	121-35.8	7.3	1.5	30	128	3.6	0.25	0.8	1.4	B	SAN JUAN BAUTISTA
29	7	36	6.8	36-40.7	121- 6.1	4.5	1.4	16	123	1.9	0.11	0.5	0.4	B	PANOCHE PASS
29	7	36	33.8	36-40.2	121- 6.1	4.0	1.2	12	99	1.1	0.09	0.5	0.5	B	PANOCHE PASS
29	12	28	22.7	38-40.6	122-50.2	4.0	1.4	19	65	8.0	0.13	0.4	0.8	B	JIMTOWN
29	19	14	18.3	38-48.3	122-49.3	1.1	2.0	27	43	2.8	0.09	0.2	0.2	A	THE GEYSERS
29	19	52	6.6	38-48.3	122-49.3	1.2	1.0	12	52	2.8	0.06	0.2	0.2	A	THE GEYSERS
29	21	32	20.7	36-26.1	121- 2.3	1.3	1.5	14	80	2.0	0.10	0.4	0.4	A	TOPO VALLEY
30	0	3	0.0	38-49.2	122-48.0	3.6	1.1	14	80	3.8	0.15	0.6	0.6	A	THE GEYSERS
30	12	16	32.7	36-56.7	121-26.5	3.5	1.5	27	73	5.1	0.13	0.3	0.2	B	SAN FELIPE

CENTRAL CALIFORNIA EARTHQUAKES--FIRST QUARTER 1977 (CONTINUED)

1977	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	Q	QUADRANGLE
MAR 30	12	45	45.6	36-42.6	121- 5.9	5.0	1.8	36	58	5.4	0.12	0.3	0.3	B	PANOCHE PASS
30	15	0	9.9	36-29.2	121- 6.6	8.9	1.3	12	182	5.8	0.12	0.9	1.3	C	TOPO VALLEY
30	17	47	30.8	37-12.3	122- 7.3	12.1	1.3	17	77	4.2	0.05	0.3	0.3	A	CASTLE ROCK RIDGE
30	19	20	41.3	35-59.4	120-34.7	4.3	1.5	8	90	8.9	0.16	1.5	1.6	B	STOCKDALE MTN
30	21	3	13.6	36-37.1	121-10.0	11.0	1.8	29	58	5.2	0.17	0.5	0.8	B	BICKMORE CANYON
30	21	39	3.7	36-31.6	121- 6.2	11.3	1.3	14	66	3.1	0.10	0.3	0.9	A	SAN BENITO
31	0	18	54.5	36-32.3	121- 6.6	12.7	1.5	17	68	4.0	0.13	0.6	1.1	A	SAN BENITO
31	0	19	14.7	36-31.5	121- 6.2	10.8	1.5	13	82	2.9	0.10	0.5	1.0	A	SAN BENITO
31	1	27	54.8	38-48.3	122-48.1	1.4	1.3	9	71	4.0	0.09	0.4	0.3	A	THE GEYSERS
31	1	28	25.5	36-36.9	121-16.5	9.5	1.3	24	45	3.5	0.13	0.4	0.8	A	MT JOHNSON
31	2	36	45.9	36-55.2	121-28.1	5.7	1.5	25	65	3.5	0.10	0.3	0.7	A	SAN FELIPE
31	3	34	41.9	36-23.9	121- 1.7	7.4	1.2	17	98	3.1	0.23	1.0	1.9	B	TOPO VALLEY
31	4	34	32.4	36-39.6	121-19.5	5.2	1.1	18	57	3.7	0.13	0.5	1.0	A	PAICINES
31	7	19	1.3	36-43.8	121-20.3	11.8	1.0	11	72	2.4	0.16	1.3	2.3	B	PAICINES
31	8	4	38.7	38-48.1	122-48.6	1.5	0.7	10	78	3.8	0.06	0.2	0.2	A	THE GEYSERS
31	10	2	48.9	36-30.2	121- 6.9	3.6	1.3	18	58	3.6	0.18	0.6	0.6	B	SAN BENITO
31	11	32	35.3	36-11.7	120-32.0	0.1	1.4	8	226	13.3	0.18	1.6	0.9	C	SHERMAN PEAK
31	12	58	57.2	36-27.3	121- 4.4	7.2	1.3	18	83	5.6	0.17	0.7	1.4	B	TOPO VALLEY
31	20	20	38.9	36-53.4	121-29.5	9.3	1.1	27	63	2.0	0.13	0.5	0.9	A	SAN FELIPE